A gender lens on individuals' educational and occupational careers in Denmark

Evidence across the life course

Dissertation

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Abstract

The situation in terms of equality between males and females is substantially determined by the (gendered) opportunities and constraints of a given institutional environment. Denmark is often cited as a prime example of a country which offers its citizens optimal conditions in this regard, and where nowadays gender equality has been fully achieved – including in such important spheres as the worlds of education and work. It is probably for this reason that empirical evidence on the topic is relatively scarce; in particular, there is no in-depth country case study which provides a comprehensive state-of-the-art analysis of Danish men's and women's actual educational and professional careers across the life course. To close this gap, the overarching research question pursued by my thesis is: What relevance does gender have for individuals' educational and occupational life course outcomes within Denmark's institutional context? For this purpose, Section 1 first of all elaborates on the theoretical underpinnings, the research design, and the information base of this work. Then, by drawing on high-quality longitudinal data from Danish administrative registers, and applying descriptive as well as multivariate methods, a total of three studies are carried out to answer the aforementioned guiding question (Section 2). Here, gender disparities within the following life course stages, spanning from childhood to adulthood, are taken into consideration: First, children's pathways in tracked Danish post-compulsory education and training; second, young adults' initial integration into the Danish labor market and their educational achievements and first job outcomes; third, adults' labor market returns from participation in diverse forms of Danish adult learning. The results, which are again briefly summarized and discussed in Section 3, show that even within Denmark's specific national setting, strongly committed as it is to guaranteeing everyone equal *opportunities* in all areas of society, being male or female does indeed play a role in individuals' educational and occupational life course *outcomes*. In short: While Danish women have now more than caught up with men when it comes to their level of education and training, already at the time of first labor market entry, both horizontal and vertical gender-based segregation patterns continue to exist (although these are declining over time). As regards the field of adult learning, it appears that females are more likely to engage in such activities than men, and some gender differences can also be observed concerning the economic returns from later-life learning. In conclusion, it can thus be said that, even in Denmark, there is still scope for improvement with respect to the actual realization of gender equality.

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Introduction

"Gender inequality holds back the growth of individuals, the development of countries and the evolution of societies, to the disadvantage of both men and women."

United Nations Population Fund (2000: p. 1)

A few words on the concepts of sex, gender, and gender equality

As the present thesis is concerned with a gender-sensitive life course approach to individuals' educational and occupational careers in Denmark, I would like to begin with some explanatory words with respect to the meaning of sex[2], gender, and gender equality. Since the 1970s, sociologists have distinguished between 'sex' and 'gender', critically claiming that men and women[3] are not simply 'naturally' different, but that these differences are also, and indeed above all, socially constructed by individuals' environments (Holmes 2007). The term sex is hence used as a biological categorization that refers purely to the anatomical and other physical characteristics that define men and women (Holmes 2007; EURYDICE 2010). In contrast, the concept of gender relates to the culturally anticipated behaviors of men and women based on the roles, attributes, and expectations assigned to them on the basis of their sex and learned through socialization processes (Durham and O'Byrne 2010; The World Bank 2011; United Nations 2011).

In view of the foregoing, gender is apparently not something we are born with or something we have, but something we do – also known as 'doing gender'[4]. In short it could be said that sex makes us male or female, whereas gender makes us masculine or feminine (Lindsey 2005). However, even though we think of sex as biological and gender as social, the differentiation is not that clear-cut, as Eckert and McConnell-Ginet (2013:

[2] Sometimes it is also distinguished between sex, sex category, and gender: "Placement in a sex category is achieved through application of the sex criteria, but […] sex and sex category can vary independently; that is, it is possible to claim membership in a sex category even when the sex criteria are lacking" (West and Zimmerman 1987: p. 127).

[3] Subsequently, men are always mentioned first. However, this is not intended to establish a hierarchy.

[4] In the landmark article 'Doing Gender' by West and Zimmerman (1987) it is argued that individuals 'do' gender as an ongoing activity, embedded in everyday interaction. Thus, gender "[…] must be continually socially reconstructed in light of 'normative conceptions' of men and women. People act with the awareness that they will be judged according to what is deemed appropriate feminine or masculine behaviour" (Deutsch 2007: p. 106, 107).

p. 2) appositely note: “People tend to think of gender as the result of nurture – as social and hence fluid – while sex is the result of nature, simply given by biology. However, nature and nurture intertwine, and there is no obvious point at which sex leaves off and gender begins”. In recognising that individuals are shaped by both the natural and the social, and that differences between men and women within a society are not simply the outcome of having a male or female body, I follow the general development in sociology and prefer to use the term gender rather than sex in the framework of my thesis (Lindsey 2005; Holmes 2007).

The concept of gender equality ultimately deals with how socially produced differences between men and women determine the way in which they relate to each other and the resulting distribution of power and rights between them (United Nations 2014). There is a wide range of definitions that describe the meaning of gender equality; as an example, the following one shall be given here: “Gender equality means that women and men enjoy the same status and have equal opportunity to realize their full human rights and potential to contribute to national, political, economic, social and cultural development, and to benefit from the results” (Baker et al. 2014: p. 1). While there is a tendency to treat gender equality as an issue of exclusive concern to women, it must equally involve men, since social expectations and frameworks gender both males and females. Nevertheless, although men are certainly also affected by specific gendered difficulties, women face particular problems in attaining their full and equal human rights in societies around the world (Ministry of Foreign Affairs of Denmark 2014).

Gender (in)equality as a global issue

Without doubt, throughout the last half of the twentieth century, in many countries considerable progress has been made on gender equality (Ministry of Foreign Affairs of Denmark 2004; World Economic Forum 2014). Yet, despite the indisputable improvements, inequality between men and women is still a worldwide issue, although there is of course variation in the nature and extent of this discrimination across different societies (Baunach 2001; Ministry of Foreign Affairs of Denmark 2004). Deeply embedded in national cultures, gender relations shape all kinds of state policies and are in turn affected by them (Orloff 1996; Borchorst and Siim 2008). European countries are unique in that the welfare state has become an important institution which influences the situation of men and women, and the relationships between them (Orloff 1996; Neyer 2012). A large body of research shows that there are notions of gender incorporated in welfare state policies, emphasizing that welfare states do not act neutrally either towards

all members of society nor with regard to specific forms of individual behaviour and life course organization (Neyer 2012). The pursuit of gender equality, which is attracting increased attention from governments and international organizations, thus requires "[…] changes at many levels, including changes in attitudes and relationships, changes in institutions and legal frameworks, changes in economic institutions, and changes in political decision-making structures" (United Nations 2002: p. 1).

There are two solid arguments for the promotion of gender equality (Staur 2010). First, since the adoption of the United Nations Charter in 1945, equality between men and women has been accepted as a fundamental principle of human rights (United Nations 2011). It is a moral imperative, encompassing manifold dimensions, and is also a major factor in individuals' self-reported well-being and happiness around the world (OECD 2012a). Second, besides the fact that gender equality is therefore a core objective in itself, it is also integral to the development of prosperous societies (United Nations Population Fund 2000; Ministry of Gender Equality of Denmark 2014). Patterns of gender inequality limit the progress of a society, stopping it from making full use of the potential of its citizens, which leads to decreased levels of education, lower labor market participation, and a lower gross domestic product – this loss concerns every member of society (Baker et al. 2014).

Denmark is celebrated as a European welfare state that strongly encourages social equality and gender equality (Borchorst 2009). It is a priority for the Danish government to secure that all citizens have the same rights, obligations and opportunities in all areas of life – "[…] for the benefit of the individual, the family, the workplace and society as a whole" (Staur 2010; Ministry of Gender Equality of Denmark 2014: p. 3). Equality of opportunity for all men and women is a basic principle of Danish policies, and a pivotal element of Denmark's democracy, built on respect for human rights as well as on promoting sustainable growth the economy. Economic independence and a high level of education, creating the basis for employment, are seen as crucial in achieving gender equality (Staur 2010; Ministry of Gender Equality of Denmark 2014). Facilitated by the extensive public provision of childcare services, both genders are active on the labor market; moreover, Danish men and women are well-educated. For all the above reasons, Denmark is thought of as one of the most equal societies in the world and ranks, together with its Nordic neighbours, among the global leaders in gender equality (Staur 2010; World Economic Forum 2014).

Why analyze Danish individuals' educational and occupational trajectories by means of a gendered life course perspective?

If Denmark virtually represents a 'gender equality paradise', one might ask why gender disparities in individuals' educational and occupational life course outcomes should nonetheless be studied. In my opinion, the justification for this interest lies in the circumstance that – although the Danish national setting *de jure* ensures men and women equality of opportunity in all spheres of life, and thus also in terms of educational and labor market opportunities – it may, however, *de facto* be far from achieving equality of outcomes. Should the latter be the case, this in turn would mean that, even in Denmark, there is need for further action when it comes to the practical realization of gender equality. Besides, probably due to the official view that in Denmark gender equality has been realized today, to my knowledge there is surprisingly little research in this field – especially with respect to the emergence and development of gender-based imbalances over individuals' life courses.

This study adds to the literature by providing a deeper and more complete understanding regarding the manifestation of potential inequalities between Danish[5] men and women across a longer stretch of time, thereby challenging the mere promise of *equal opportunities* by also concentrating on the achievement of *equal outcomes* for both genders. Given the great importance of education and employment for access to opportunities and resources in various domains of life, in this way influencing both the objective welfare of persons and their subjective well-being, the clear necessity to shed light on possible gender differences therein becomes apparent (Aceleanu 2012). The application of a gendered life course approach constitutes the appropriate methodological framework to guide research into this topic, since it enables a coherent integration of the different components of this study, outlined below – and at the same time effectively addresses differences in men's and women's experiences within these selected fields.

[5] In my thesis, I focus on native Danes; hence inequalities linked to ethnic background will not be addressed. It should be mentioned in this context that – compared to many other countries – Denmark's population is quite homogenous. In 2010, only around 6 percent of inhabitants had a foreign origin, with many of these persons actually coming from other Nordic countries (OECD 1998; GHK and Research voor Beleid 2011).

Core themes of the empirical investigations and applied databases

With reference to the overarching research goal of my work, which is an assessment of the relevance of gender for individuals' educational and occupational life course outcomes within the Danish institutional context, the following three core topics will be highlighted in the course of my empirical analyses: First, the role of gender regarding children's trajectories in tracked Danish post-compulsory education and training; second, gender patterns in young adults' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market; third, gender disparities concerning adults' participation in diverse forms of Danish adult learning and the related returns on the labor market. In order to examine these crucial stages of every person's life journey (concisely termed 'Mainstream Education', 'Labor Market Entry' and 'Adult Learning', see also the overview diagram on page 40) I draw on different sources of population-based register data kept by Statistics Denmark. The longitudinal data, which mainly stem from public administrative registers of governmental agencies, offer comprehensive, objective, and reliable knowledge about Denmark's entire population – including individuals' pathways within the mainstream education and training system, their transition from school to work as well as further education undertaken during adulthood and the resulting returns on the labor market. This, just like the fact that all information is collected once a year since the 1970s, makes the data especially suitable for examining men's and women's experiences in several successive phases of their life courses.

Structure of the work

My doctoral thesis consists of three main parts:

In Section 1 I present the theoretical background, the research design, as well as the underlying data of the present work. As a starting point I consider the relationship between institutional contexts, life courses, and gender (subsection 1.1). Next, I explain the life course perspective, and why it should be applied through a gender lens (subsection 1.2). This is followed by a specification of the Danish institutional setting and its commitment to gender equality (subsection 1.3). Taking up on the previously outlined ideas, I then portray the research design and the guiding questions of my study (subsection 1.4). After that, the utilized databases are described (subsection 1.5). Finally, I give an overview of the subsequent empirical analyses (subsection 1.6).

Section 2 constitutes the empirical part of this thesis (supplemented with topic-specific theoretical information), in which – structured according to the lead questions of the thesis – I analyze Danish individuals' educational and occupational life course trajectories through the gender lens. Altogether, this section comprises three self-contained, independent[6] studies. I start with an exploration of the role of gender for children's pathways in tracked Danish post-compulsory education and training; I also include an initial, brief excursus on Danish early childhood education and care aimed at young children not yet of eligible school age (subsection 2.1). I then turn to the examination of young adults' initial integration into the Danish labor market and gender patterns in entrants' educational achievements and first job outcomes (subsection 2.2). Lastly, I investigate gender differences in adults' labor market returns from participation in diverse forms of Danish adult learning (subsection 2.3).

The work is rounded off by a concluding summary and discussion, given in Section 3. After a recapitulation of the key objectives (subsection 3.1), I evaluate the main findings of the aforementioned empirical investigations in light of my overall research interest, namely the significance of gender for individuals' educational and occupational life course outcomes within the Danish institutional environment (subsection 3.2). Additionally, I comment briefly on the contribution of my research (subsection 3.3).

[6] A consequence of this is that it is not always the same group of persons which is followed over time.

1. Theoretical background, research design, and underlying data of the present work

1.1 Starting point: Institutional contexts, life courses, and gender

The relevance of institutional context conditions for individuals' life courses

Individuals' life courses, denoted as "[…] the sequence of activities or states and events in various life domains spanning from birth to death" (Mayer 2004: p. 5), do not unfold in isolation, but are influenced by the structural features of the context in which they are located (Corna 2011). Thus, sociologists see the life course as the embedding of individual lives into institutional orders and their related policies, shaping personal biographies (Mayer 2004; Grunow 2006; Corna 2011). This view does, however, not assume a deterministic character of state institutions as the only causal factor governing life course patterns, thereby discounting the relevance of individual agency (Hillmert 2000; Corna 2011). Rather, it acknowledges the interplay between institutional contexts and the lives of citizens and emphasizes the role of the state as being crucial for understanding individuals' life courses and life course outcomes (see also subsection 1.2) (Corna 2011).

Government policies affect the individual level in some direct or indirect way since they define certain rules and hence, as Diewald and Mayer (2008: p. 5) put it, "[…] narrow down to a large extent which life avenues are open and which are closed, which decisions are rather costly and which ones are especially rewarding" (Hillmert 2000; Leisering 2003). These 'societal opportunity structures', created by institutional arrangements, differ markedly across developed countries, and even though every policy has some bearing on the life course, it is the institutions of the welfare state in particular that are intended to influence individuals' lives (Leisering 2003; Grunow 2006). A 'welfare state' is the sum of its institutions, laws, values, and culture – the term broadly refers to the institutional outcome of the aim to make the basic welfare of the individual a concern of government (Leisering 2003). Accordingly, one of the main elements of any welfare state today is the provision of key welfare services, with tax payments constituting the primary way of financing them (Corna 2011; Schulz-Forberg 2012). Despite the fact that most capitalist economies can be considered welfare states, there is substantial cross-national

variation in the concrete design of these services, which is why diverse types of 'welfare state regimes' can be distinguished, as described later in subsection 1.3. These setting-specific differences imply that the ways in which welfare states affect individuals' life course trajectories may vary between countries as well (Grunow 2006; Corna 2011).

Although countries thus represent unique institutional, cultural, and normative settings, with diverse welfare mixes which may impact on the life course in different ways and to varying degrees, Kohli (1985) and others have argued that modern societies have generated predictable life course patterns, termed the 'institutionalization of the life course' (Mayer 2001; Grunow 2006; Wingens et al. 2011). According to this view, individuals' life courses have become increasingly institutionally-dependent and uniform in timing, resulting in 'normal biographies' with a tripartite temporal order of education, work, and retirement (Henretta 1992; Wingens et al. 2011). Criticisms of this thesis include the argument that this kind of standardization presumes a gendered division of labor, and that it is predominantly male life courses which fit into the proposed model, whereas – as I will explain in the following – life course structures and experiences are gendered (Krüger and Levy 2001; Grunow 2006). Beforehand, it should be mentioned briefly that another important topic of life course research has been the opposite idea; namely, that, in the context of the increasing heterogeneity observable in life course patterns, the 'standard life course' as a normative ideal and empirical reality is in the process of erosion – the so-called 'de-institutionalization of the life course' (Mortimer and Shanahan 2003; Wilmoth and Ferraro 2007). In recent times, the earlier focus on the orderliness or disorderliness of individuals' lives has been complemented by the attempt to explore the specific influences which institutional factors have on life course outcomes (Mayer 2009).

Societal opportunity structures and gendered life course experiences

When contextualizing individuals' life courses, it must be taken into account that institutional settings shape men's and women's life courses differently, since they provide specifically gendered cultural guidelines, as well as gendered sets of structural options and constraints (Grunow 2006; Corna 2011). Consequently, life course patterns and outcomes are both context specific and gendered, whereas gendered life course experiences are not simply the result of men's and women's free choices regarding work, family, and so forth, but mirror the interplay between individual decisions and the constraints and opportunities given by institutional contexts (Corna 2011). Gender

relations profoundly influence the character of institutional arrangements; likewise, the state actively engages in the legislative and institutional design of gender relations (Orloff 1996; Grunow 2006). Mindful of these facts, gender can be considered as constituting an element in the construction of citizenship, influencing social behavior and determining individuals' roles and life chances (Sainsbury 1994; Grunow 2006).

As pointed out by Sainsbury (1994: p. 43) "[…] gender is a factor which structures welfare states fundamentally […]", with major consequences for men's and women's life circumstances. The different welfare regimes and their policy packages correspond to certain ideological frameworks, including gender assumptions, affecting outcomes for men and women with regard to their interrelationships, access to resources, as well as their roles and responsibilities (Sainsbury 1994; Gornick and Meyers 2004). Even though gender relations have undoubtedly undergone profound changes in developed countries during the past decades, and the life circumstances of both genders have partially converged, welfare states continue to powerfully impact on the life chances of men and women (Grunow 2006; Mandel and Shalev 2009). How they fare in diverse welfare states is still linked to the wide variety of ideological perspectives on paid and unpaid work, caregiving, family, and gender relations, which frequently result in dissimilar policy outcomes for men and women and gender inequalities in the public provision of welfare (Sainsbury 1996; Gornick and Meyers 2004). As will be explained in more detail in subsection 1.3, feminist and gender researchers have therefore emphasized the role of gender ideologies in structuring welfare policies, and have sought to include gender into the comparative analysis of welfare states (Sainsbury 1994).

In light of the aforementioned considerations, which form the starting point of my work, in the next subsection I elaborate on the life course approach and why it should be combined with a gender-sensitive design. The resulting gendered life course perspective will finally serve as the research procedure of the present study (outlined in subsection 1.4).

1.2 The life course perspective and its application through a gender lens

Development and key principles of the life course approach

While nowadays the life course perspective constitutes a widespread theoretical model in many areas of social sciences, and longitudinal data collections have become the so-called 'gold standard' of quantitative research, this has not always been the case (Elder et

al. 2003; Kulu and Milewski 2007; Mayer 2009). Largely neglected by early sociological research, the life course approach developed over several decades and across various disciplines – besides sociologists, anthropologists, social historians, demographers, and psychologists all contributed to give it shape (Elder et al. 2003; Hutchison 2010). The history of life course research can be traced back to the early 20th century when, inspired by the pioneering study 'The Polish Peasant in Europe and America' (1918-1920) by Thomas and Zaniecki, researchers started to investigate the life trajectories of individuals and groups (Elder et al. 2003; Kulu and Milewski 2007). In its current form, the research paradigm emerged in the 1960s as a result of further advancements in theory, data sources, and methods. Because of the radical social changes which took place during this decade, new questions regarding the correlation between an individual's life history, their cohort, and the historical context arose. Moreover, appropriate data sources, in the form of longitudinal studies, became available, and new methods for analyzing life course data were developed, starting with simple causal techniques right up to complex event-history models (Kulu and Milewski 2007).

The life course perspective is thus still relatively young, but has become an increasingly popular approach for gaining insights into the complexity and dynamic nature of human lives (Kulu and Milewski 2007; Hutchison 2010). The concept of the life course generally refers to temporal patterns of life, denoting the sequence of partaking in social positions and roles within a given social structure and across diverse life domains, spanning the whole life line (e.g. growing up in families, leaving parental homes, education and training activities, occupational careers, partnership formation, parenthood and so on) (Leisering 2003; Diewald and Mayer 2008). It represents a new way of thinking about and studying human lives, with the aim of mapping, describing, and explaining individuals' movements between different statuses and roles, pursuing the wider objective of understanding social change and social phenomena (Elder 1994; Mayer 2004; Kulu and Milewski 2007).

What, then, precisely characterizes the life course perspective in comparison to other adjacent research approaches (Mayer 2009)? There appears to be an emerging consensus on the following six key life course principles: interplay of human lives and historical context; human agency in making choices; timing of lives; linked or interdependent lives; diversity in life course trajectories; and finally, developmental risk and protection (Mayer 2009; Hutchison 2010). The first principle, interplay of human lives and historical context, recognizes that human behavior is influenced by historical place and time.

Accordingly, it emphasizes the need to contextualize individual biographies and to take both cohort and period effects into account (Elder 1994; Corna 2011). The second principle, human agency in making choices, is closely related to the previous one and refers to the tension between individual action and structural conditions. Life courses are constructed by individuals' choices, made within the opportunities and constraints yielded by specific institutional and structural contexts (Hutchison 2010). Hence, although individuals are agents of their own lives, their actions are interlocked with (changing) environments (Elder 1994). The third principle, timing of lives, claims that particular roles and behaviors are connected to where people are in their lives – in terms of chronological age, biological age, psychological age, social age, and spiritual age (Elder 1994; Hutchison 2010). For example, getting married or having children are events that can generally be related to certain age norms (Elder 1994). The fourth principle, linked or interdependent lives, focuses on the idea that humans' lives are embedded in social relationships and thus lived interdependently. Individuals' social worlds – family, friends, and co-workers – thereby interact across the life span[7] (Elder 1994; Corna 2011). The fifth principle, diversity in life course trajectories, acknowledges the manifoldness of life journeys and the many reasons for it: culture, cohort variations, individual agency, social class, and gender (Hutchison 2010). The sixth and final principle of the life course paradigm, developmental risk and protection, states that circumstances and events early in life may have implications for subsequent transitions, and may either put the life course trajectory at risk or protect it (Thomson et al. 2008; Hutchison 2010). In this way, prior life history has long-term impacts on later life outcomes (Mayer 2009).

Underpinned by these six central principles, the life course perspective today constitutes a well-established methodological framework, which, in combination with a gender-sensitive approach, forms the appropriate research strategy to examine individuals' educational and occupational trajectories within the Danish institutional setting (Elder 1994).

The usefulness of adopting a gender-sensitive life course perspective

As has been outlined within subsection 1.1, institutional context conditions matter for individuals' life courses, while the societal opportunity structures provided by different welfare state arrangements foster gendered life course experiences (Grunow 2006). These

[7] As an example, Corna (2011: p. 11) mentions that decisions regarding "[…] work and family experiences across the life course are often made in tandem with those of spouses, and in response to care giving responsibilities for children and aging parents".

circumstances are, as I have just shown, also recognised within the core principles of the life course paradigm. The fact that men's and women's experiences in key life course domains may vary greatly indicates the necessity of not treating 'population' as a homogenous group, but rather acknowledging gender as significant variable when researching individuals' life course trajectories (Leduc 2009; Corna 2011). For instance, men and women make different choices regarding educational achievement, the type and extent of labor market participation, or care giving responsibilities in the family; these decisions are not solely the result of personal choice, but are also shaped by the normative and institutional frames of the specific national setting (Corna 2011).

In combining the life course approach with the study of gender, which emerged as one of the most important research trends in the field of sociology in the 20th century, the existence and magnitude of gender-based disparities within various life domains can be detected and tracked over a long stretch of time (Lindsey 2005; Mayer 2009). In this way, gender-specific patterns do not remain invisible, risking overlooking differences between men's and women's experiences. This in turn could result in drawing the wrong conclusions, or at least in an incomplete picture of the problem, since significant aspects of an issue are undocumented. Moreover, gender-sensitive research can play a major role in empowering people, especially women, though it gives equal value to both men's and women's viewpoints (Leduc 2009). Integrating a gender perspective into life course research thus improves its coverage, relevance, and quality, and advances our understanding regarding the intersection of the institutional context, life course outcomes, and gender, as discussed in subsection 1.1 (Leduc 2009; Corna 2011).

Consistent with the assumption that individuals' choices and experiences across the life course are influenced by the opportunities and constraints of specific contexts, I next provide a description of the Danish institutional setting. I refer here to Esping-Andersen's classical welfare regime typology, as well as to other gender researchers' innovative contributions to mainstream welfare state theory – more precisely, to the scheme created by Lewis and Ostner (Diewald and Mayer 2008; Corna 2011). In this context Denmark's strong commitment to achieving gender equality is also addressed.

1.3 Denmark's institutional setting and commitment to gender equality

Esping-Andersen's mainstream welfare state classification

In order to gain a comprehensive insight into individuals' life course outcomes, a broader scope must be taken, incorporating the institutional framework conditions within which the men and women under study are living (Morgan et al. 2004). An improved understanding of a country-specific setting is often achieved by considering how and why it differs from other national contexts according to comparative criteria (Corna 2011). For many years now, welfare state classification has therefore been a much-discussed topic in the literature, and has attracted considerable interest from academics and scientists around the world (Arcanjo 2006; De Frel 2009). Various attempts have been undertaken to create an 'ideal typology' which is applicable to most welfare states (Arcanjo 2006; De Frel 2009). In this regard, it has proven to be useful to distinguish between a limited number of countries, characterized by their distinct social policies (Hillmert 2000). Although national settings are unique, they tend to cluster around particular types of welfare states – as such, a 'regime' approach constitutes a "[…] major tool to generalize across the wide variations of advanced welfare states" (Ebbinghaus 2012: p. 1) and hence an effective way "[…] for the meaningful differentiation and classification of welfare regimes according to the similarity – not the equivalence – of the social welfare programs they support" (Hega and Hokenmaier 2002: p. 6; Grunow 2006).

Probably the best known mainstream classification scheme, to which I will primarily refer here, is the one proposed by the Danish sociologist Esping-Andersen (1990) in his book 'The Three Worlds of Welfare Capitalism' (De Frel 2009). As one of the most central and frequently cited contributions to comparative welfare state research, it represents a reference work which initiated a lively academic debate and led to a great number of empirical studies (Powell and Barrientos 2004; Arcanjo 2006). Esping-Andersen grounds his typology on the following two key dimensions that determine advanced societies' core social policies: decommodification and stratification (Willemse and De Beer 2012). Decommodification indicates the extent to which "[…] individuals, or families, can uphold a socially acceptable standard of living independently of market participation" (Esping-Andersen 1990: p. 37), pointing to the social security that takes effect if a person is unable to participate in the labor market (e.g. because of unemployment, sickness, old age, childbearing, etc.) (Neyer 2012). Stratification deals with the degree to which welfare state policies directly and indirectly promote social hierarchy, including whether

the entitlement to and the level of benefits is equally granted to everyone or if there are differences according to occupational or family status (Neyer 2012; Willemse and De Beer 2012). Or, as Esping-Andersen himself (1990: p. 23) puts it: "The welfare state is not just a mechanism that intervenes in, and possibly corrects, the structure of inequality; it is, in its own right, a system of stratification. It is an active force in the ordering of social relations". The structural context of decommodification and stratification arises from the public-private mix with respect to welfare production (Powell and Barrientos 2004). On the basis of the aforementioned criteria, he identifies three kinds of Western welfare regimes – liberal, conservative, and social democratic – each of them representing a distinctive social policy profile in terms of decommodification and stratification, as well as a qualitatively different relationship between the state, the market, and the family in providing social services (Hega and Hokenmaier 2002; Andersen 2004; Grunow 2006).

Liberal welfare regimes, such as the United States, Australia, Canada, or Great Britain, are marked by their preference for market welfare production and private provision of social security, with only little involvement of the state (Powell and Barrientos 2004; Neyer 2012). Public support funded by taxation is typically minimal, means-tested, and caters mainly to the working class and the poor (Stier et al. 2001; Hega and Hokenmaier 2002; Arcanjo 2006). For these reasons, the degree of decommodification in the liberal model is low. Since this regime type fosters social dualisms between the majority of the population who mostly relies on the market and those who are principally dependent on public provision, the level of stratification on the contrary is high (Orloff 1996; Arcanjo 2006; Willemse and De Beer 2012).

In the conservative welfare regime – represented by Germany, Austria, France, and Italy – the state, the market, and the family share responsibility for citizens' welfare (Stier et al. 2001). However, it places the family at the centre of welfare provision, whereas the state and the market only intervene in case of 'family failure' (Powell and Barrientos 2004). Social security is mainly financed by compulsory contributions from dependent workers; welfare rights are not based on egalitarian standards but are dependent upon social statuses (Hillmert 2000; Stier et al. 2001). Eligibility rules are quite strict and the level of earnings-related benefits is relatively high. On the whole, the extent of decommodification is therefore medium, but is largely directed to employed people with a long contribution period (Arcanjo 2006). With regard to stratification it can be noted that conservative regimes tend to preserve traditional status and class differentials in

society, resulting in a high degree of stratification (Orloff 1996; Beblavý et al. 2011; Willemse and De Beer 2012).

Finally, social democratic welfare regimes as a third type comprise the Nordic countries such as Sweden, Norway, or Denmark. Here, the state plays a key role in welfare production, aiming to protect people from market uncertainties and to reduce the links between market and life chances (Stier et al. 2001; Powell and Barrientos 2004). Based on the principles of universalism and egalitarianism, this regime promotes the equality of citizens and offers generous benefits for all residents (Arcanjo 2006). These welfare benefits tend to be defined at the individual level and at a noticeably higher standard than the minimal need. As they are tax-based, full employment is another important goal. Accordingly, it appears that social democratic models combine a high level of decommodification with a low degree of stratification (Hega and Hokenmaier 2002; Andersen 2004; Willemse and De Beer 2012).

Denmark's features as a social democratic welfare regime

Although the Nordic countries are included in the same social democratic cluster, it is a fact that, besides their fundamental similarities, national differences between them do exist (Borchorst and Siim 2008; Nordic Centre for Welfare and Social Issues 2013). At this point I would therefore like to take the opportunity to look at what especially characterizes the Danish social democratic welfare regime (Madsen 2006). It is a model with a long history but which, in particular, was developed and most profoundly expressed in the 1970s (Andersen 2004; Madsen 2006). During this time, stable economic growth and low unemployment made it financially possible to implement its legal foundation through the social welfare reform, passed by the Danish parliament between 1970 and 1976 (Madsen 2006). The underlying ethos was – and today still is – that any citizen should be guaranteed state assistance according to his or her needs, regardless of economic and social background (Madsen 2006; Nordic Centre for Welfare and Social Issues 2013). The Danish welfare model hence strongly pursues a universal, egalitarian, and solidaristic orientation, receiving broad support both from political parties and the population: "All benefit; all are dependent; and all will presumably feel obliged to pay" (Esping-Andersen, 1990: p. 169; Andersen 2004; Grunow 2006). Access to most of the tax-financed, generous welfare transfers and services is defined for the individual and only tied to Danish citizenship – not to the family, previous contributions, or labor market participation (Andersen 2004; Madsen 2006). This citizenship-based universalism along

with the model's redistributive character leads to a high degree of equality and a relatively high level of material wellbeing among the population (Madsen 2006).

Another noteworthy fact is that, within the public system, social responsibilities are decentralized to local government and communities, meaning that local authorities have wide autonomy when realizing the diverse social protection schemes. By and large, the public sector is responsible for the provision of social security benefits and the wide range of high quality, for the most part free public services (Ministry of Social Affairs and Integration 2011; Blades 2012). This – as well as the already mentioned circumstance that all welfare schemes are collectively financed via taxation – requires not only a sizeable public sector and thus a great share of public sector employment, but also a generally high employment rate for the model to be financially sustainable (Hillmert 2000; Andersen 2004; Andersen and Svarer 2007). Consequently, an additional characteristic of the Danish welfare state is the close relationship between the institutions of welfare and work, and thus the goal of maximizing economic participation, striving for full employment (Kildal 2001; Powell and Barrientos 2004). In furtherance of a well-functioning labor market, and to keep unemployment low, the social security system is therefore flanked by a flexible labor market and active labor market policies, together also referred to as the 'golden triangle' of flexicurity (see also point 2.2.2) (Plougmann and Madsen 2002; Blades 2012). Basically existing since the labor market reform of 1994, when the principle of active employment policy was fully established, this term describes a system which combines a generous social safety net with relaxed employment protection and the obligation of the unemployed to participate in activation measures (Becker 2007; Hendeliowitz 2008; Abrahamson 2009).

On these grounds, Denmark reports a high employment rate[8], including – and not at least because of – high rates of female labor force participation[9] (Kildal 2001; Andersen 2004). That women, and particularly also mothers of young children, participate in work to nearly the same extent as men[10] has been made possible by the rapid expansion of the

[8] In 2013 the unemployment rate among those aged 15-64 years in Denmark was 7.2 percent (EU average: 11.0 percent) (Statistics Denmark 2015).

[9] Despite the high level of female employment, in comparison with low-fertility countries such as Italy, Spain, or Germany, the fertility rate in Denmark has remained relatively high and above the EU28 overall rate of 1.57 children per woman. However, in recent years Denmark witnessed a decline in its fertility rate: with 1.73 births per woman in 2012, the country had reached the lowest fertility rate since 1998, and the lowest among the Nordic countries (Rostgaard 2014).

[10] Melkas and Anker (2003: p. 9) argue that "[…] women's participation in gainful employment has become not only a structural and cultural expectation, but a structural necessity in the Nordic countries".

Danish public sector in the 1960s and 1970s. During this time, care for children and dependent elderly or disabled persons was largely shifted from the domestic sphere to good quality, affordable public services (see also the excursus in point 2.1.2) (Grunow 2006; Ministry of Social Affairs and Integration 2011; Nordic Centre for Welfare and Social Issues 2013). Moreover, a policy of generous family leave schemes with long leave periods[11] and relatively high compensation rates[12] has been instituted (Lewis 1996; Datta Gupta et al. 2006). Correspondingly, since 1960, the female employment rate has almost doubled from just over 40 percent to just below 80 percent today. Danes can therefore be designated as dual-earner families, within which women have become self-reliant and less dependent on men and marriage (Madsen 2006; Ottosen 2009). This is in line with the Danish welfare state's long-standing policies and commitment to equal opportunities for everyone and in all spheres of society, also along gender lines (Melkas and Anker 2003). Finally, the combination of all these components have made the Danish social democratic welfare system world famous, enjoying an international reputation for uniting a generous welfare provision by the state with strong economic growth, a low unemployment rate, and exceptionally high levels of labor force participation – especially among women (Stephens 1995). Hence, it appears that Denmark has "[…] achieved the elusive combination of social equality and economic efficiency" (Stephens 1995: p. 1).

Criticism of Esping-Andersen's conceptualization and feminist scholars' call for a more gender-sensitive typology of welfare regimes

Going back to Esping-Andersen's welfare state classification, it should be noted that despite the acknowledged merits of his work, some criticisms have also been expressed (Arcanjo 2006). These primarily focus on the following areas: the classification of countries, the analytical focus on cash benefits, methodological problems, the value of the concept of welfare regimes as an instrument of comparative analysis, and the gender-blindness of the scheme (Arcanjo 2006; Beblavý et al. 2011). Here I would like to expand

[11] Total family leave in Denmark is 52 weeks: "Mothers have 18 weeks of maternity leave, of which four are to be taken before the due date, and fathers have two weeks of paternity leave. Thirty-two weeks of parental leave can be split between parents as they choose" (Rostgaard 2014: p. 9). Yet, more than in the other Nordic countries, in Denmark it is mainly women who take parental leave (Rostgaard 2014).

[12] In Denmark, all family leave taken by economically active persons is accompanied by a financial benefit which is paid by the parents' municipal government, where the compensation rate typically ranges from 30 percent to 90 percent of the usual salary (Ray 2008; Statistics Denmark 2015). An exception is the public sector (where more than half of the women, but only around 20 percent of the male workforce is employed), having a 100 percent replacement rate for the first 24 weeks (Datta Gupta et al. 2006).

in more detail on the critical arguments that have been raised by feminist scholars in relation to Esping-Andersen's regime typology, and indeed to mainstream welfare state classification in general. Gender researchers have questioned the usefulness of his regime concept, since – in their view – it is based on a gender-irrelevant set of criteria, or differently expressed, "[…] the question of gender is not systematically built into" (Langan and Ostner 1991: p. 130) the influential framework (Park et al. 2002; Doric 2008). At best, it presumes the gender neutrality of citizens, and one could argue that it implicitly rests upon male workers (Orloff 1996; Corna 2011). Feminist analysts have pointed out that this is problematic because it thus overlooks the ways in which specific institutional contexts and the societal opportunity structures they provide may differently impact men and women, as I explained earlier in subsection 1.1 (Corna 2011). The gender-blindness of Esping-Andersen's concept of decommodification, in particular, which implies involvement in the formal labor market, has been intensely debated (Park et al. 2002; Corna 2011). The reason behind this is that entitlement to contributory-based benefits assumes men's and women's equal access to the role of 'worker', ignoring the gendered division of unpaid caregiving work which does not qualify for such claims. Therefore, the typology fails to capture another essential dimension of welfare states, namely policies influencing caring and family arrangements, and thus women's position vis-à-vis the labor market (Corna 2011; Neyer 2012).

Addressing this criticism, in his later writings Esping-Andersen (1999) armed his welfare regime typology with new concepts – familialization and defamilialization – with the aim of taking into account the gender-relevant facet of welfare states by analyzing the role of the family more systematically (Stier et al. 2001; Doric 2008). A familialistic regime (not to be equated with 'pro-family') is one in which public policy considers primary responsibility for welfare and caregiving to lie with the household (Esping-Andersen 1999; Arcanjo 2006). In contrast, a defamilializing system (not implying 'anti-family') seeks to relax the household's welfare and caring responsibilities, either via welfare state provision or via market provision (Esping-Andersen 1999). Consequently, and especially for women and mothers, the concept of defamilialization parallels the concept of decommodification because it enables them to become 'commodified' (Esping-Andersen 1999). To determine the degree of defamilialization – and hence the extent to which social policy unburdens the household, lessens individuals' dependence on relatives, and allows the reconciliation of work and family life – Esping-Andersen looks at the levels of public expenditure on family services and the proportion of children under the age of

three in public childcare (Esping-Andersen 1999; Guo and Gilbert 2012). In doing so, he observes that liberal welfare states exhibit the lowest degree of defamilialization, followed by conservative welfare models with a moderate level of defamilialization, and finally social democratic welfare regimes, which clearly show the highest degree of defamilialization, since only in the Nordic welfare states does social policy specifically focus on the objective of strengthening women's economic autonomy and their continuous participation in employment (Esping-Andersen 1999; Guo and Gilbert 2012). While Esping-Andersen came to the conclusion that this distinction sufficiently satisfies the demand for a gender dimension, and moreover still largely resembles 'The Three Worlds of Welfare Capitalism', for almost a decade feminist scholars have been emphasizing the need for a more targeted, gender-focused typology of welfare states (Stier et al. 2001; Kulawik 2005; Pascall 2008).

Indeed, although Esping-Andersen's classification scheme is certainly a useful basis to portray the Danish institutional setting, feminist researchers' alternative, gender-centered contributions to mainstream welfare state theory form an important supplement to gain a deeper understanding of Denmark's country-specific context in terms of gender issues. In the following section, I will thus also briefly describe the concept of gender regimes, in particular the approach formulated by Lewis and Ostner (1992, 1994, 1995), and clarify where the country under study is to be located therein.

Bringing gender into the comparative analysis of welfare states: The concept of gender regimes

Since the beginning of the 1990s, feminist writers have highlighted the notions of gender ingrained in welfare policies and therefore attempted to introduce gender into comparative welfare state research (Lewis 1996; Neyer 2012). Central to the feminist approach to welfare state analysis is the recognition that social policy contexts are not gender-neutral, and consequently have different meanings for the life chances of men and women (Corna 2011; Nordenmark 2013). In critical response to the inherent male bias in Esping-Andersen's prevailing classification of welfare state regimes – liberal, conservative, and social democratic – feminist academics have sought alternative ways to make explicit the gendered nature of welfare states and developed the concept of gender regimes (Corna 2011; Guo and Gilbert 2012). The term 'gender regime' can be understood as the key policy logics which welfare states pursue in relation to gender, or, as MacRae (2006: p. 524) expresses it: "Gender regime refers to a set of norms, values,

policies, principles and laws that inform and influence gender relations in a given polity" (Pascall and Lewis 2004). The purpose of using the gender regime approach is to compare welfare states' different gendered policy logics by means of certain key dimensions; the question of which criteria are best suited for this has become the subject of controversial discussion (Kulawik 2005; Borchorst and Siim 2008). Consequently, in the time since gender-related issues have been brought to the fore of comparative welfare state analysis, a broad, almost impenetrable variety of conceptualizations (see for example Lewis 1992; Lewis and Ostner 1994; Ostner 1995; Orloff 1993; O'Connor 1993; Pfau-Effinger 1996; Sainsbury 1994, 1996; Korpi 2000; Walby 2004) have come into being (Kulawik 2005; Guo and Gilbert 2012). The subsequent illustrative characterization of a gender regime typology will therefore be confined to the one proposed by Jane Lewis and Ilona Ostner (1992, 1994, 1995), a pioneering work to which frequent reference is made in the literature (Betzelt 2007).

Lewis and Ostner's innovative gender regime typology

Lewis and Ostner (1992, 1994, 1995) conceptualize a typology of gender regimes founded on the assumption that welfare state provision is geared towards the prevalent notion of a 'male breadwinner' with a dependent non-paid wife as well as dependent children (Pfau-Effinger 1998). The degree to which societies are based upon this premise influences women's and especially mother's 'commodification', and thus the extent to which their participation in gainful employment is supported by the welfare state, which is reflected in the availability of public childcare or the design of social security policies (Kulawik 2005; Neyer 2012). The main criterion for distinguishing between different gender regimes is thus the evaluation of the extent to which the 'male breadwinner / female homemaker model' is maintained or altered (Pfau-Effinger 1998; Corna 2011; Neyer 2012). Accordingly, Western welfare states are classified as strong male breadwinner regimes, modified mal breadwinner regimes, and weak male breadwinner regimes (Melkas and Anker 2003).

Strong male breadwinner states (e.g. Great Britain, Germany, or Austria) are marked by the part-time labor force participation of women, a limited supply of childcare services, and an unequal treatment of wives with respect to social security (Guo and Gilbert 2012). In modified male breadwinner states (e.g. France) women's full-time employment rate is higher than in the previous model. Moreover, they are granted social provisions like maternity leave and public childcare (Guo and Gilbert 2012). Finally, weak male

breadwinner states (e.g. Sweden, Norway, or Denmark) are consciously pursuing a dual breadwinner model. Social entitlements are provided to both men and women based on their labor market participation; further features are generous family leave benefits as well as the extensive provision of public childcare facilities (Finkel 2006; Guo and Gilbert 2012). When comparing Lewis and Ostner's gender-sensitive classification scheme with the mainstream welfare regime typology designed by Esping-Andersen, it turns out that, with the exception of the Nordic countries, divergent country clusters appear (Pfau-Effinger 2005; Betzelt 2007).

Denmark's characteristics as a weak male breadwinner gender regime

At this juncture, I would like to explain in a little more detail why Denmark, together with the other Scandinavian countries, falls into the category of weak male breadwinner states. The Danish welfare state takes the view that both men and women should be fully integrated into the labor market, which is accomplished via a comprehensive set of social services organized and mainly financed by the state (Pfau-Effinger 1998). For several decades now, generous family leave schemes, as well as the extensive supply of high quality public childcare – particularly within the so-called system of 'early childhood education and care' for preschool children aged under six – are part of an explicit social and family policy designed to support a move from the male breadwinner system towards a dual breadwinner model and full employment (Pascall 2008; Guo and Gilbert 2012). Thus, during the 1960s and 1970s, the male breadwinner model faded away, and nowadays the employment rate of Danish women (especially mothers) is not only among the highest in the European Union, but also comparable to Danish men's activity rates and working hours (Hoheisel 2007; Borchorst and Siim 2008; Kirkegaard 2014).

In consequence, a large share of Denmark's population is part of the labor force, and nowadays men make up only slightly more than half the workforce (Statistics Denmark 2012). Furthermore, women achieve the same or higher levels of education, which is an important prerequisite for their success on the labor market (Henrekson and Stenkula 2009). This supports another important political goal, namely the promotion of women's economic independence from their spouses (Doric 2008). Besides the other aforementioned measures, females' autonomy and engagement in wage work is also fostered by the fact that social and family policies, as well as taxation, are premised upon men's and women's individual rights and duties (Borchorst and Siim 2008). Within the framework of Lewis and Ostner's gender regime typology, Denmark can hence be

designated as a publicly-supported weak male breadwinner (or dual breadwinner) state, pursuing 'women-friendly' policies which "[…] would not force harder choices on women than on men, or permit unjust treatment on the basis of sex" (Hernes 1987: p. 15; Borchorst and Siim 2008).

All in all – considered from the perspective of mainstream welfare state theory as well as from gender researchers' point of view – Denmark can hence be characterized by a social democratic approach to welfare; at the same time, it represents a weak male breadwinner gender regime with a high potential for establishing a system of gender equality (Guo and Gilbert 2012). For this reason, I would now also like to say a few words specifically on the issue of gender equality, to which great value is attached within the Danish institutional setting.

The Danish commitment to gender equality

Denmark is well known for its efforts towards creating an equal welfare society, seeking to provide every citizen "[…] with the same rights, duties and opportunities in all areas of society and throughout all phases of life" (Nordic Council of Ministers 2011: p. 4), where the state is used as an instrument to achieve this (Melkas and Anker 2003). In particular, the commitment to achieving equality between men and women tends to be stressed "[…] as a special "Danish" value, deeply embedded in the very foundations of Danish democracy […]" (Borchorst and Siim 2008: p. 17). Denmark's pursuit of gender equality is attributable to two solid arguments. First, there is no doubt that gender equality is an issue of human rights, social justice, and fairness. Second, while gender equality is an important goal in its own right, it also constitutes a relevant factor for economic growth, democracy, and welfare (United Nations 2002; Staur 2010; Ministry of Foreign Affairs of Denmark 2014; Ministry of Gender Equality of Denmark 2014). In 2004, the Danish government's targets with respect to gender equality were described as follows: "The Government wants to create equal opportunities for women and men. Its goal is for women and men to be seen as equals and have equal opportunities for making their choices. With this in mind, the government will strive to break down the barriers preventing individual women and men from leading the lives they want. The government wants respect for diversity and respect for the individual's personal choice. Gender equality is a crux of Denmark's democracy." (Council of Europe 2004: p. 57)

This way of thinking has a long history in Danish society; the beginnings of gender equality policy can be traced back for more than 40 years (for a precise overview, see e.g. Carbin 2007) (Ministry of Gender Equality of Denmark 2014). As early as the mid-1960s, governmental structures pursuing gender equality policies were in force, at that time mainly directed towards the situation of women on the labor market (Hoheisel 2007; Berger and Dorsch 2010). In 1965, the acting social democratic government set up a commission responsible for evaluating women's status in modern Danish society (termed 'Commission on Women's Equal Rights'), based on which new legislative initiatives necessary for the elimination of gender inequalities should be established (Carbin 2007; Berger and Dorsch 2010). During the nine years of its existence, the commission produced many reports and studies (Blomqvist 2015). Within its final report presented in 1974, the establishment of a permanent governmental equal opportunities council was recommended, whereupon – also prompted by pressure from the Danish women's movement – in 1975 the 'Equal Status Council' was convened (Berger and Dorsch 2010). Through this, gender equality was formally established on Denmark's political agenda (Carbin 2007). The Equal Status Council consisted of representatives from employers, trade unions, and women's organisations (Berger and Dorsch 2010; Blomqvist 2015). Its tasks included, for example, the monitoring of societal developments in general, the examination of factors that work against gender equality, the advisory support of governmental and municipal authorities in relation to gender equality, and the release of publications on gender equality issues (Blomqvist 2015).

With the adoption of the 'Gender Equality Act' in 2000, the institutionalization of the national 'gender equality machinery' was fundamentally re-organized. The Equal Status Council was closed and replaced by the 'Minister of Gender Equality', the 'Department of Gender Equality', the 'Gender Equality Board', and the 'Research Centre for Gender Equality' (Berger and Dorsch 2010; Blomqvist 2015). From that time onwards, the Minister of Gender Equality has had the task of fostering gender equality and coordinating the government's overall activities in the domain of gender equality, as well as the equality work of other ministries (Council of Europe 2004). The Department of Gender Equality is the secretariat for the Minister of Gender Equality, and responsible for government initiatives targeted at promoting equality between men and women. Furthermore, it advises the Minister in matters relating to gender equality (Council of Europe 2004). The Gender Equality Board (2009 superseded by the 'Board of Equal Treatment') deals with complaints about discrimination on grounds of gender, and since

2009 also because of race, religious beliefs, social origin, and so forth (Council of Europe 2004; Blomqvist 2015). Finally, the Research Centre for Gender Equality conducts research, development, and communication about gender equality (Council of Europe 2004). In addition to the aforementioned institutions, the Gender Equality Act legally introduced the principle of gender mainstreaming, aimed at the promotion of equality between men and women by integrating the gender equality perspective in all aspects of state policy, planning, and management (Sterner and Biller 2007). Also, state institutions were from now on obliged to prepare biennial action plans for gender equality, defining the priorities on equality work for the coming years (Carbin 2007; Augustin 2011). While the Gender Equality Act serves the purpose of banning direct and indirect gender discrimination in all walks of life outside the labor market, gender equality legislation on the labor market was already initiated with the 1976 'Equal Pay Act' and the 'Equal Treatment Act' of 1978 (Ministry of Gender Equality of Denmark 2014).

Overall, Denmark's national policy on gender equality can be described as strongly institutionalized and legally anchored, being regularly evaluated and implemented via action plans (Berger and Dorsch 2010). It is motivated both by social justice and economic reasons, and clearly oriented towards equal opportunities and gender mainstreaming (Giullari and Lewis 2005; Berger and Dorsch 2010). There is little tradition of affirmative action, i.e. temporary special means to promote gender equality, like a forced gender quota on company boards, which are viewed very critically (Borchorst and Siim 2008; Selanec and Senden 2011). Moreover, it is a fact that Denmark's membership in the European Union and the United Nations has had an impact on the development of Danish gender equality legislation (Carbin 2007). Public policies and initiatives are closely monitored by non-governmental organizations like the 'National Council of Women in Denmark' or 'The Danish Women's Society', which traditionally take an active role in achieving gender equality (Council of Europe 2004). In recent years, no major changes of the institutional mechanisms on gender equality have occurred (Carbin 2007). There is now a tendency in Danish gender equality policies to increasingly focus on ethnic minorities, addressing issues such as arranged and forced marriages, honor-related violence, insufficient integration into the labor market, etc. Men's equality in society has also moved to the forefront of attention, for example by starting awareness-raising campaigns on paternity leave or by responding to the negative trend in dropout rates from secondary education among boys (Augustin 2011).

After having now specified the relevant theoretical background information – which comprised, firstly, a consideration of the relationship between institutional contexts, life courses, and gender; secondly, an explanation of the life course perspective and its integration with a gender-sensitive design; and thirdly, a description of Denmark's institutional setting and commitment to gender equality – in the following section, I raise the question as to whether the country really embodies a 'paradise of gender equality', which leads me to the presentation of the research design and the central questions of my study.

1.4 Research design and guiding questions of the study

Denmark – truly a 'gender equality paradise'?

In the preceding subsections, I argued that individuals' life courses are influenced by the conditions of the institutional framework, and the associated gendered societal opportunity structures in which they are embedded. Consequently, life course patterns and outcomes are not only context-specific, but also differ according to gender (subsection 1.1). These observations, which formed the starting point of my theoretical remarks, are also reflected in the key principles of a well-developed research paradigm I presented in subsection 1.2, namely the life course perspective. It represents a prominent approach to studying human lives, recognizing the tensions between individual actions and institutional context, and also the fact that gender is a major reason for the diversity in individual biographies, which indicates the usefulness of applying a gender lens to life course research. Against this background, the need for a precise understanding of the country-specific setting within which men's and women's lives proceed becomes apparent. As shown in subsection 1.3, by utilizing Esping-Andersen's mainstream welfare state classification, complemented by Lewis and Ostner's gender-focused typology of welfare states, Denmark can be described as pursuing a social democratic approach to welfare and representing a weak male breadwinner model. Another important feature of the Danish institutional setting I mentioned is its long-standing endeavors to ensure equality of opportunity for all citizens, along with a special commitment to achieving a gender-equal society.

It is for this reason that Denmark is said to be one of the most gender-equal countries in the world, often even presented as a 'gender equality paradise' (Staur 2010). In international rankings, for example 'The Global Gender Gap Report', Denmark regularly takes one of the top positions (Gíslason and Eydal 2011). Men and women *de jure* have

the same formal rights, obligations, and possibilities in all spheres of life, including equal educational and labor market opportunities, which are mirrored in high levels of education and employment for both genders (Grunow 2006; Ministry of Gender Equality of Denmark 2014). The official public and political discourse is therefore dominated by the presumption that today, gender equality has been fully achieved among the majority population, and that only in a few areas are further developments needed (Grunow 2006; Borchorst and Siim 2008; Kirkegaard 2014). Nevertheless, gender equality is a complex term with different dimensions and many layers of meaning (Plantenga et al. 2009). In the Danish context, the objective of gender equality policies is primarily defined as *equality of opportunity* (Augustin 2011). A distinct perspective is to consider the principle of equal opportunities only as one dimension of social justice, and adding the principle of *equal outcomes* as another concern for policymakers (Delorenzi et al. 2005). The point is that equality of opportunity must not de facto go hand in hand with equality of outcome, since the former "[…] does not refer to the distribution per se, but rather to chances that different people have to obtain a particular position in the distribution" (Van de Werfhorst 2014a: p. 126). Thus, as Reeves and Baden (2000: p. 10) notice, "[…] gender equality implies equality of opportunity for women and men […], whereas true gender equality focuses on their wider life outcomes". If one continues with this train of thought, the subsequent question arises: Is Denmark truly a 'gender equality paradise', offering men and women not only equal possibilities, but also allowing the realization of equal results, or are – despite the favourable institutional conditions – substantial gender-based disparities in individuals' educational and occupational life course trajectories observable?

Research design and leading questions of the study

It is precisely the aforementioned issue I seek to study within the scope of this thesis, namely the relevance of gender for individuals' educational and occupational life course outcomes within the Danish institutional setting. Especially with regard to Denmark, which is celebrated for being a frontrunner in generating social equality and gender equality, gender matters tend to be pushed into the background (Borchorst 2009). However, although equality under law is a significant precondition to ensure men's and women's equal opportunities, the adoption of a gender neutral perspective does not guarantee that everyone's outcomes are equally probable and that Danish gender equality is an unambiguous success (Borchorst 2009). Even in contemporary Danish society, where both genders have become autonomous agents in their own right concerning

education and labor force participation, gender may still be associated with important differences in individuals' life course patterns (Kohli 2007). But despite the fact that the concept of gender as a "[…] theoretical and methodological approach to the cultural construction of sexual differences that alludes the inequalities between the male and female sexes and to the way the two aspects relate to each other […]" (Godoy 2004: p. 10) has become a prominent category of analysis in the discipline of sociology, gender disparities within the aforementioned life domains, and in particular the manifestation of these inequalities over the life course, have been scarcely addressed in previous research on the case of Denmark (Lindsey 2005). To fill this research gap, Danish men's and women's educational and occupational outcomes, related to the opportunities and constraints which they encounter as they move through the life course, need to be further explored. Since gender inequality affects individuals during their entire life, and does not suddenly materialize with the beginning of adulthood, there is also a need to shed light on childhood dynamics during early stages of the life course – but equally on later adult life (Baunach 2001). To guide research into this topic, a suitable methodological framework needs to be selected. For the present study, a gendered life course perspective, which has been described in greater detail in subsection 1.2, constitutes the appropriate scientific approach. While the life course paradigm provides the broader framework for investigating individuals' experiences at certain successive stages of their lives, supplementing it with a gender-sensitive design acknowledges the fact that men's and women's outcomes in key life course domains may vary greatly (Foster 2005; Leduc 2009; Corna 2011). Such a perspective has the potential to enhance our understanding of the emergence and further development of gendered life course patterns within Denmark's specific national setting, by unveiling possible inequalities over a longer stretch of time.

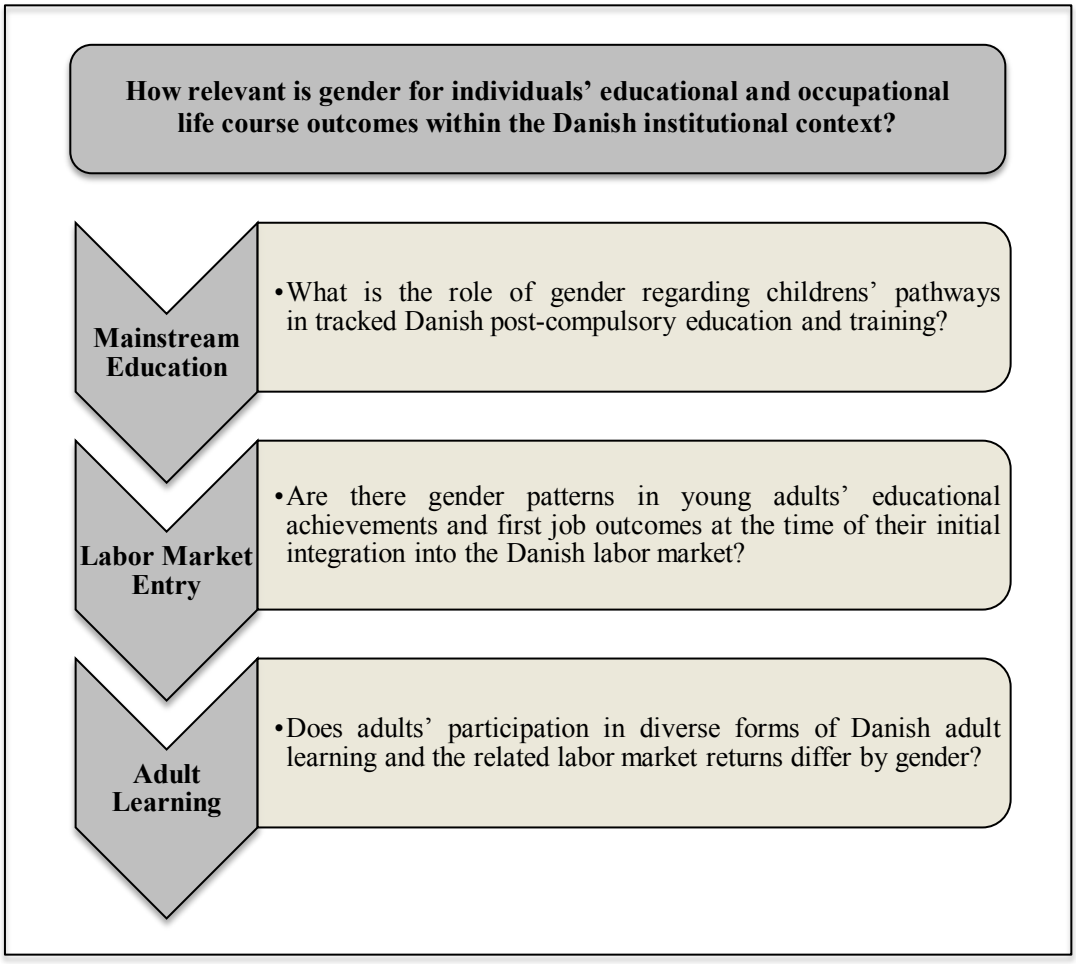
The question remains as to why I intend to research gender differences with specific regard to individuals' educational and occupational life course outcomes – what does that involve in more concrete terms? The main reason for this focus lies in the fact that these are central themes in men's and women's journeys through life, and because there is a close connection between education, employment, and quality of life. Quality of life is a very broad field which cannot be discussed in detail at this point, comprising, among other things, issues related both to the objective welfare of persons (occupation, income, working conditions) as well as their subjective well-being (life satisfaction, contentment). There is a wide range of research examining the quality of life both at the individual and

the societal level, emphasizing the link to education and employment (Aceleanu 2012). Education is among the most important predictors of one's health, social participation, being in a relationship, employability, career opportunities, income, and wealth, all of them well-known for being positively related to the quality of citizens' lives (Gong et al. 2011; Powdthavee et al. 2015). Thus, because of the various channels through which educational capital is associated with advantages in core domains of life, it is a key factor for shaping individuals' life opportunities, and the basis of equality (Thomson et al. 2008).

Given this great significance of education and training for individuals' lives, the identification of gender disparities therein is a crucial research matter. Therefore, the first part of the empirical analyses, carried out within subsection 2.1, deals with the field of mainstream education and explores the role of gender regarding childrens' pathways in tracked Danish post-compulsory education and training. Moreover, as Denmark has a long-established tradition of mainly publicly-delivered early childhood education and care for young children below compulsory school age, which fulfils many important functions for society – including the establishment of gender equality in both paid and unpaid work – at the beginning of the first empirical subsection, a concise excursus on this topic is also undertaken. Since educational attainment is fundamental for making a successful school-to-work transition, as well as for men's and women's outcomes on the labor market, the second part of the empirical investigations, set out in subsection 2.2, then focuses on the phase of labor market entry, and investigates whether there are gender patterns in young adults' educational achievements and first occupational outcomes at the time of their initial integration into the Danish labor market. Leaving the mainstream education and training system and finding employment, and thereby taking the first steps into (young) adulthood, is clearly a key phase of personal and working life (Bussi 2012). Yet, in the further course of individuals' lives, education continues to be of vital importance. Nowadays, education is an integral part of all phases of the life course, and fits "[…] less well in the 'standard' life cycle in which an initial educational phase in early life was followed by an employment career until (early) retirement" (Van de Werfhorst 2014b: p. xv). Workers need to update their professional skills continually via adult learning in order to gain greater stability on the labor market and increase their chances of earning more (Feinstein et al. 2004; Aceleanu 2012). For this reason, the third and final part of the empirical examinations, found in subsection 2.3, addresses the topic of adult learning and is concerned with the question as to whether adults' participation in

diverse forms of Danish adult learning and the related labor market returns differ by gender. At this point, I would like to mention that all analyses performed within Section 2 focus mainly on native Danes; hence, inequalities linked to ethnic background will not be considered more closely here (on this subject, see for example Colding 2004, Nusche et al. 2010, Brodmann and Polavieja 2011, or Veerman and Dronkers 2013). To sum up, the empirical part of this work as a whole comprises three self-contained, independent studies, whereby the main observation window opens when children leave compulsory education, continues over young adults' initial integration into the labor market, and closes with adults' participation in adult learning. In light of the foregoing, the figure below provides a clear overview of the overarching research interest and the different life course stages under study, along with the corresponding core questions that guide the empirical analyses. Which databases have been applied in order to test these queries is described hereafter in subsection 1.5.

Figure 1.1: Overview of the present study



Source: Own diagram.

1.5 Description of the applied databases

The empirical analyses carried out to answer the guiding questions of this study are based on high quality data taken from Danish administrative registers, covering the whole population of Denmark (Statistics Denmark 2010). The longitudinal, annual data is maintained by Statistics Denmark, which is an independent institution and the central authority for Danish statistics (Statistics Denmark 2009). It was founded in 1850 under the name the Statistical Bureau; following the adoption of the Act on Statistics Denmark by the Danish parliament in 1966 the name was changed to Statistics Denmark (Statistics Denmark 2009). In 1968, Denmark introduced the Personal Identification number, which was used for the first time as an identification key in the Population and Housing census in 1970 (Statistics Denmark 2014a). The first attempts to base the production of statistics on registers were then made during the 1970s, but it is only since the beginning of the 1980s that the registers have been satisfactorily comprehensive and well-established (Statistics Denmark 2014a).

Nowadays, most of the data stored by Statistics Denmark stems from administrative registers of governmental agencies (Central Population Register, Central Business Register, Register of Building and Dwelling Statistics), offering detailed, objective, and reliable information on the entire Danish populations of citizens, companies, and housing (Statistics Denmark 2010; Statistics Denmark 2014a). In addition to data from the public registers, information is supplied by, for example, labor market organisations that already collect data from their members, as well as through telephone interviews or sample surveys (Statistics Denmark 2010). To encourage Danish register-based research, for a limited period, and subject to certain conditions, Statistics Denmark grants researchers access to the anonymized micro-data, that is, data on persons, families, households, workplaces, or companies (Statistics Denmark 2010; Statistics Denmark 2014a). Moreover, in order to diminish the cost of datasets for research purposes, and also to solve some specific data issues, Statistics Denmark has developed a number of special research databases that are compiled from several registers (United Nations 2007; Statistics Denmark 2014a).

For the purpose of my study, I use diverse register-based information kept by Statistics Denmark, including the ‘Student Register’ for the gender-sensitive empirical analyses on children’s educational pathways in tracked Danish post-compulsory schooling (subsection 2.1), and the ‘Integrated Database for Labor Market Research’ for the

gendered empirical investigations on young adults' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market (subsection 2.2) as well as on adults' participation in diverse forms of Danish adult learning and the related labor market returns (subsection 2.3). Only the excursus at the beginning of subsection 2.1, in which I take a look at Danish early childhood education and care, is not based on administrative register data, but instead on survey data derived from the 'Danish Longitudinal Survey of Children', from the Danish National Centre for Social Research.

The 'Danish Longitudinal Survey of Children', which, as I have just mentioned, is consulted for the excursus in point 2.1.2, was initiated in 1995 and has the aim of monitoring children from birth until adulthood. It is a longitudinal cohort study with repeated data collections ('waves') on the same group of individuals, offering rich and detailed information about the children and their families (Ottosen 2011). The database comprises a sample of 6,000 children randomly selected among all children who were born in 1995 by mothers with Danish citizenship (the 'Danish Survey')[13]. Moreover, all children under study must be living in Denmark at the time of the survey (Coleman 2015). Up to now, five waves have been carried out, each of them related to important periods or transition points in the lives of the children. The first wave took place in 1996 (when children were six months old and the normal leave-of-absence was coming to an end), the second in 1999 (when children were three years old and well into their 'daycare career'), the third in 2003 (when children were seven years old and had mostly started school), the fourth in 2007 (when children were 11 years old and had attended compulsory education for a few years), and the fifth in 2011 (when children were 15 years old and close to finishing compulsory schooling) (Coleman 2015). The data was gathered by means of standardized face-to-face interviews and questionnaires for self-completion; for the most part, the mothers were considered as the primary respondents and therefore participated in all waves of the survey. The fathers and the children themselves have only been involved in some of the survey rounds (Ottosen 2011).

[13] In addition to the 'Danish Survey' described here, the 'Danish Longitudinal Survey of Children' also contains an 'Ethnic Survey' (including 611 children who were born by mothers with non-Danish citizenship and lived in Denmark for at least three years). However, this subsample suffers from severe attrition and non-response problems. The 'Children in Care Survey' represents the third subsample, consisting of children who are, or have been, placed away from their parents, e.g. in foster homes or residential institutions (Ottosen 2011; Esping Andersen et al. 2012).

The ‘Student Register’, applied in the main part of subsection 2.1, is a longitudinal register created by Statistics Denmark that enables the analysis of individuals’ entrance to, enrolment in, and graduation from the Danish mainstream education and training system, as well as transfers within the system. Consequently, one can follow students’ educational careers throughout all education programs, starting from compulsory education up until tertiary education (Statistics Denmark 2014b). The statistical population hence consists of all individuals who have been enrolled in a publicly-recognized ordinary educational program in Denmark, meaning that the program is regulated and approved by the Ministry of Education (or some other ministry) (Statistics Denmark 2014b). Education taken within the Danish adult education and continuing training system, or outside Denmark, is not included in the register. Among the variables in the register are, for example, the following: person number, education code, starting date, ending date, or institution number. Based on reported data from the Danish educational institutions, ‘The Student Register’ is updated annually since the early 1970s (Statistics Denmark 2014b).

The longitudinal ‘Integrated Database for Labor Market Research’, utilized for subsections 2.2 and 2.3, is a linked employer-employee data set that was designed by Statistics Denmark in order to promote research dealing with diverse labor market issues (Mortensen 2000; Møller et al. 2001). It combines information from different statistical registers at Statistics Denmark, thereby containing more than 200 variables which fall into three categories: individuals (sex, age, education, employment, income etc.), the individual’s attachment to the labor market (occupation, work-scheme, tenure, turnover etc.), and finally establishments and firms (industry, employees, location etc.) (Møller et al. 2001; Timmermans 2010). Another characteristic of this database is its yearly data structure, allowing the monitoring of the total population of people and enterprises in Denmark since 1980 (Møller et al. 2001).

To sum up, from these different data sources I have virtually all the necessary information for the entire Danish population at my disposal. Furthermore, the data is particularly well-suited for understanding what is happening over the life course, since it allows me to follow individuals over time, and to carry out longitudinal analyses of men’s and women’s educational and occupational careers in Denmark. Next, an overview of the concrete points to be covered by the empirical analyses is given.

1.6 Outline of the subsequent empirical analyses

The empirical part of this work, which is set out in Section 2, consists of three main subsections that are structured according to the guiding questions of my study. Each of these three empirical subsections begins with a few preliminary remarks, as well as some theoretical information regarding the topic concerned, before the research objectives and methodology, the empirical results, and finally an interim summary and discussion of the particular theme are presented. The following overview is confined to the specific research objectives that will be dealt with in the course of subsections 2.1, 2.2 and 2.3.

In subsection 2.1 – which at the outset also includes a brief excursus on Danish early childhood education and care for young children below compulsory school age – I investigate children's pathways in tracked Danish post-compulsory education and training with respect to the role of gender. In more concrete terms, I first explore the extent to which male and female students do not complete any kind of upper secondary education soon after successful graduation from compulsory primary and lower secondary education. Then I address the question of whether there are gender-based differences as regards the initial completion of a general instead of a vocational upper secondary education. This is followed by a consideration of upgrading in upper secondary education, that is, to what extent did students of both genders who initially completed a vocational upper secondary education, go on to accomplish a general upper secondary education later on. Finally, I analyze whether male and female students who attained a general upper secondary education are equally enrolling in some kind of tertiary education, as well as whether there is a gender imbalance among those students who initially enrol in tertiary education at the university level instead of the non-university level.

Young adults' initial integration into the Danish labor market and gender patterns in entrants' educational achievements and first job outcomes are addressed in subsection 2.2. Here I begin with an examination of disparities in men's and women's educational achievement levels at the outset of their occupational careers. Next, the focus is on horizontal gender differences in young professionals' first significant job by studying their entry into specific occupational sectors. On the basis of earnings, I additionally aim to assess in how far gender-based vertical inequalities occur at initial entry into work, and to what extent they are influenced by educational and horizontal asymmetries. Another

basic goal of the empirical analyses in this subsection is the observation of trends across birth cohorts.

Within subsection 2.3 I finally analyze gender differences in adults' labor market returns from participation in diverse forms of Danish adult learning. As a first step, I concentrate on adult men's and women's participation in various types of adult learning, encompassing patterns of participation, participants' age distribution, and chances of participation. In the second step, gendered labour market returns deriving from different kinds of adult learning are in the centre of consideration. These include the risks of becoming unemployed and the chances of exiting unemployment, as well as direct (upward and downward) career mobility.

The findings of the aforementioned empirical investigations are again highlighted and placed in context in Section 3, which completes this work by giving a concluding summary and discussion.

2. Through the gender lens: An analysis of Danish individuals' educational and occupational careers across the life course

2.1 CHILDREN'S PATHWAYS IN TRACKED DANISH POST-COMPULSORY EDUCATION AND TRAINING AND THE ROLE OF GENDER

2.1.1 Preliminary remarks

Four core tasks of education and its role both for society and the individual

In contemporary societies, education has four functions or core tasks which are to some degree present in most educational systems. A first task of schooling is the efficient sorting of students into different tracks according to their talents and interests, with the aim of optimizing the matching process and thereby the 'total' production of knowledge and skills (the 'skill optimization task'). The second task is to prepare young people for integration into the labor market by equipping them with competences that are occupationally productive (the 'labor market allocation task'). As a third task, education should make a contribution to the formation of civic skills and help socialize students into active citizenship (the 'socialisation task'). The fourth and perhaps most central task of educational systems is that they should provide all students with equal opportunities, regardless of individual-level characteristics such as, for example, gender or social origin (the 'equal opportunities task') (Van de Werfhorst 2014a).

While this makes clear what education should do, the question is: Does it do that well? The efficacy of an educational system can be assessed by whether it succeeds in fulfilling these tasks, thereby taking into account the crucial role of education both for society as a whole and for the individual (Van de Werfhorst 2014a). As noted by Aceleanu (2012: p. 719) a "[…] society composed of people with high education, develops faster through innovation and increased work efficiency. Increased work efficiency contributes to increased macroeconomic results[14], which is found directly or indirectly in living conditions and wellbeing." Hence, education improves the quality of life, on both the societal and the individual level. Education is thus not only an important determinant of

[14] A well-educated population not only fosters economic growth and productivity, it also leads to increased tax revenues and higher levels of employment. At the same time, expenditure on social security decreases, and in the areas such as health or crime, the costs to society are also lower (Allmendinger et al. 2011).

macroeconomic success and persons' objective welfare (labor market opportunities, earnings, wealth); it is also associated with non-monetary factors such as contentment, social participation, health, or longevity. It can therefore be said that educational achievement is a key marker of advantage in various domains of individuals' lives, where the gap between the less well and better educated has been shown to accumulate over the life course – although the size of the gap and the degree of accumulation differs across societies (Thomson et al. 2008; Aceleanu 2012).

Education and (gender) equality therein as top priorities within the Danish knowledge-based society

In Denmark, there is a high awareness of the value of education, and it therefore plays a pivotal role and is seen as the foundation of contemporary Danish welfare society (Shapiro 2004). Like other modern industrialized societies, Denmark has evolved into a globalized, knowledge-based economy where education and labor force experience have become the most important types of human capital (Blossfeld et al. 2005; Blossfeld 2009). The country's standard of living and the quality of life of its citizens are therefore linked to its success in enhancing knowledge creation, innovation, and adaptability, and in maximizing educational opportunities (Kearns 2002). Accordingly, Denmark has a strongly education-oriented culture, setting the production and maintenance of knowledge as one of its top priorities (Smith et al. 2012). Expenditure on education as a percentage of GDP sends important signals about the value a country attaches to it, which is why the Danish welfare state belongs to the OECD members that invest the greatest share of their wealth in education: In 2010, the country spent 8.0 percent of its GDP, and thus major resources, on educational institutions at primary, secondary, and tertiary level, compared to the OECD average of 6.3 percent. With a share of 94.5 percent in 2010, the largest proportion of expenditure comes from public sources (The Danish National Commission for UNESCO and Ministry of Education 2004; OECD 2010; OECD 2013).

Denmark hence exhibits a well-developed, high quality mainstream education and training system, which is generously financed and mainly run by the state. The system optimizes knowledge production by means of tracked upper secondary and tertiary education, as well as enabling students to acquire nationally recognized qualifications valued in the labor market (Shapiro 2004; Van de Werfhorst 2014a). Education is, however, not solely considered an investment in human capital in order to ensure a skilled workforce and enhance productivity and growth; it is also an opportunity to foster individuals' active participation in and contribution to a democratic society (Shapiro

2004; OECD 2004). Moreover, the Danish educational system traditionally aims at achieving equity in education, with schools seen as vehicle for creating equal opportunities for all citizens (Nusche et al. 2010).

For the large majority of Danish children, however, organized instruction starts before they begin compulsory schooling within the mainstream education and training system at age six, namely when they optionally participate in early childhood education and care (ECEC). These (mostly publicly-provided) services, integrating care with education, have existed for a long time, are specifically designed for preschoolers, and potentially play a significant role in their development. Although the input from parents is undoubtedly the major influence on young children, a growing body of research[15] indicates that early educational experiences can enhance children's cognitive and socio-emotional competences, as well as help them to be better prepared to enter and succeed[16] in formal schooling (Jensen 2012; OECD 2012b; Del Boca 2015). Since diverse studies (e.g. Esping-Andersen et al. 2012) show that the benefits of attending good quality ECEC are greatest for those children who come from disadvantaged backgrounds, such programs can be effective in generating a more equitable access to learning opportunities later in school, thereby equalizing educational outcomes (OECD 2010; Lazzari and Vandenbroeck 2013).

In Denmark, as in Scandinavia in general, ensuring everyone equal chances in terms of education has been a very strong goal since the emergence of the social democratic welfare state (The Danish Government 2013; Thomsen et al. 2013). Nowadays, all educational opportunities are open to all citizens, and women's right to education – which is among the first rights females obtained in the 19th century – is seen as one of the most significant gender equality achievements in society (Ministry of Gender Equality of Denmark 2014). Since then, girls and women have improved their qualifications by education, which contributes to the fact that, today, the Danish population's average educational level is high[17] and has increased markedly over the last 30 years. The expansion of education in Denmark within the last decades is also related to the circumstance that people tend to reach higher educational levels, because of greater graduation rates from upper secondary and tertiary education. This trend is increasingly

[15] See, for example, Peisner-Feinberg 2004, Bauchmüller et al. 2011, Ruhm and Waldfogel 2012, Datta Gupta and Simonsen 2015, or Del Boca 2015.
[16] Hanushek and Woessmann (2014: p. 170) note "[…] that learning in the formative years before formal schooling is important for ultimate academic achievement".
[17] In 2012, an average of 35 percent of the 25-64-year-olds had completed a tertiary education. With this percentage, Denmark is above the average for the OECD countries (32 percent in 2012) (Statistics Denmark 2015).

observable among females, which mirrors a general tendency across developed countries – that women's educational attainment is about to or has already surpassed that of men (OECD 2011a; Olofsson and Wadensjö 2012; Pekkarinen 2012; Statistics Denmark 2013; Ministry of Gender Equality of Denmark 2014).

Guiding question and concrete research objectives of the first empirical subsection

It has been pointed out above that education ideally fulfills a variety of important roles for society as well as for the individual, meaning that equitable educational opportunities for all citizens – irrespective of their gender, social origin, or other individual-level characteristics – have a high priority within the Danish knowledge-based economy. To this end, Denmark possesses a well-developed mainstream educational system[18] which in principle offers every citizen high quality learning opportunities at all levels, thereby optimizing the production of knowledge through tracked post-compulsory education and training. Hence, during compulsory primary and lower secondary education there is no early tracking of children, which follow the same common path until they are around 16 years old. However, when arriving at this point, school graduates who aim to continue their education must decide whether to take up a program within the vocational or the general track of upper secondary education. Furthermore, those students who finally earn a general upper secondary degree[19] at around age 19 or 20 and wish to progress to the tertiary level must choose between entering university-level or non-university-level tertiary education (see point 2.1.3 for a more detailed discussion) (Bussi 2012).

Since educational capital is a central factor which affects individuals' life opportunities in manifold ways – and in Denmark especially after graduation from non-tracked compulsory schooling, and also upon the completion of a program within the general track of upper secondary education important choices with long-term implications for children's future educational achievements have to be taken – there is a clear need to reveal, in particular, inequalities that arise within post-compulsory education and training trajectories. While the focus in this regard is usually on educational disadvantages resulting from social origin, it is also of great significance to shed light on the gender disparities therein. Even though Danish law has, for decades, formally given males and

[18] In addition, there is a comprehensive system of adult education and continuing training (see point 2.3.2).
[19] As such, students in Danish vocational upper secondary education and training generally do not achieve entrance qualifications for tertiary education (Jørgensen 2014).

females the same educational rights and opportunities, equality of educational outcomes[20] among both genders is not automatically guaranteed (Ministry of Gender Equality of Denmark 2014). For that purpose, the central question guiding the analyses within the first empirical subsection of my doctoral thesis is: *What is the role of gender regarding children's pathways in tracked Danish post-compulsory education and training?*[21]

By using longitudinal data from Danish administrative registers maintained by Statistics Denmark, and applying descriptive and multivariate methods, this leads to the pursuit of five concrete research objectives: First, to examine to what extent male and female students do not complete any kind of upper secondary education soon after having successfully graduated from compulsory primary and lower secondary education; second, to investigate gender-based differences with regard to the initial completion of a program within the general instead of the vocational upper secondary track; third, analyzing the extent to which students of both genders who initially completed vocational upper secondary education and training go on to 'upgrade' their level of upper secondary education by accomplishing a general upper secondary education later on; fourth, to study if male and female students who attained a general upper secondary education are enrolling equally in some kind of tertiary education; fifth, exploring gender imbalances among those students who initially enrol in tertiary education at the university level instead of the non-university level.

As has been briefly mentioned, Denmark looks back on a long-standing tradition of ECEC, which begins before the age when children must attend school. These services, for the most part publicly-funded, which are increasingly being considered as part of the formal Danish educational system, are provided for a variety of reasons. Besides the expected positive effect on children's competence development and the equalization of learning outcomes, further explicit rationales include the promotion of full employment among men and women as well as the achievement of gender equality (Meyers and Gornick 2003; OECD 2012b; Winther-Lindqvist 2013; Lazzari and Vandenbroeck 2013). Therefore, I consider it important to include a concise excursus on the issue of Danish

[20] Although *formal* opportunities in terms of equal right of access to and participation in education are certainly important, considering educational outcomes "[…] is seen as the best means of assessing *actual* opportunities, i.e. those available and taken up" (EURYDICE 2010: p. 20).

[21] Because I concentrate on the role of gender for children's pathways in tracked Danish post-compulsory education and training, I do not consider gender differences in non-tracked compulsory education. Nonetheless, of course boys' and girls' performance in compulsory schooling is linked to the educational level they ultimately attain (Buchmann et al. 2008). As indicated above, in my analyses, I take account of children's mean performance in class 9, i.e. at the regular end of compulsory education and prior to tracking.

ECEC, before then turning to the primary topic pursued within this part of my work. In this excursus, I shall say a few words about ECEC as an important theme on European policy agendas and consider its embedding in Denmark's country-specific context. Moreover, I elaborate on the characteristics of the public Danish ECEC system. As an exception, the focus here will not be on detecting potential gender disparities, but on giving an overall impression of ECEC in Denmark and the high utilization of these almost exclusively state-delivered daycare services. The latter is finally illustrated by means of descriptive analyses that draw on survey data kept by the Danish National Centre for Social Research, displaying how three-year-old Danish children are usually cared for in the daytime.

Overview of the subsequent procedure

As has been said, over the following pages, I shall initially undertake a short excursus by looking at Danish ECEC for young children at preschool age (2.1.2). Then I come to the core theme of this empirical subsection, and begin by providing the reader with theoretical background knowledge on the organization of the current mainstream education and training system in Denmark (2.1.3). For the sake of completeness, I describe here not only tracked post-compulsory upper secondary and tertiary education, but also non-tracked compulsory primary and lower secondary education. This is followed by a short theoretical discussion of the implementation of tracking at Danish post-compulsory upper secondary and tertiary level (2.1.4). Afterwards I outline my research objectives and the methodology applied (2.1.5). The results of the empirical analyses are presented in point 2.1.6. Finally, I give an interim summary and discussion on the role of gender for children's pathways in tracked Danish post-compulsory education and training (2.1.7).

2.1.2 Excursus: A brief look at Danish early childhood education and care for young children below compulsory school age

Early childhood education and care as an important topic on European policy agendas

Taking into consideration that today, most women have taken on dual roles as both mothers and workforce participants, childcare has emerged as a public policy issue: "The large number of mothers who are in the labor force and families' reliance on non-maternal care for children while their mothers work have raised questions about the kinds of child care arrangements that are currently used, the quality and safety of those arrangements, the effect of child care on children, the cost of that care, and the

government's role in providing or paying for child care" (Leibowitz 1996: p. 33). Therefore, ECEC in particular has increasingly gained in importance on European policy agendas, driven both by the aim to increase employment, competitiveness, and gender equality, as well as because of its effects on children's development, equal opportunities, and social inclusion (Lazzari and Vandenbroeck 2013). In 2002, the European member states consequently agreed on the target to provide formal childcare to at least 33 percent of children under three years old and to at least 90 percent of children aged between three and the mandatory school age until 2010 (Mills et al. 2014). Yet in 2010, the European Commission reported that only ten out of the 27 member states had fulfilled or surpassed the goal of a 33 percent coverage rate, and that not more than 11 European countries had met or exceeded the stipulated 90 percent target. Denmark is among the group of European leaders meeting both of the childcare objectives: In 2010, around 75 percent of children younger than three were enrolled in ECEC; for children from three years of age to compulsory school age the fraction amounted to around 95 percent (Mills et al. 2014). This is first and foremost possible due to a comprehensive, heavily subsidized[22] public system of ECEC, offering a large number of universally accessible, predominantly tax-financed childcare places for even the very youngest.

In order to better understand why Denmark strongly defamiliarizes care, with considerable significance attached to a well-developed and much-frequented, mainly publicly-run ECEC system that forms a cornerstone of the Danish social democratic welfare model, I would like to briefly refer to the relevant national background (Datta Gupta et al. 2006; Gíslason and Eydal 2011; Del Boca 2015).

The embedding of early childhood education and care in Denmark's national context

As argued in subsection 1.3, based on the well-known classification scheme developed by Esping-Andersen (1990), Denmark can be characterized as representing a social democratic welfare regime, with the state playing a central role in the production of welfare (Powell and Barrientos 2004). The extensive public supply of welfare services and transfers is universal and egalitarian in nature, in this way promoting equality of citizens (Arcanjo 2006). However, in order to be able to finance the tax-based welfare system, a large part of the population must be in employment, making the maximization of economic participation – including the promotion of men's and women's equal engagement in the labor market – an important and necessary objective (Powell and

[22] Denmark leads the OECD ranking with a public expenditure of 2.0 percent of the national GDP on ECEC (Urban 2009).

Barrientos 2004; Andersen and Svarer 2007; Gíslason and Eydal 2011; Ciccia and Bleijenbergh 2014). One salient feature of modern Danish society is therefore a very high employment rate, along with a remarkable level of parental labor market participation. The latter is reflected in the fact that in half the families with children younger than six, both parents work full-time, and more than two thirds of mothers with children of this age are employed (Childcare Education Services Sector 2003; OECD 2006; Hiilamo 2008). Thus, in comparison to other OECD countries, Denmark – together with Sweden and Norway – has the greatest employment rate among mothers of preschool children (Datta Gupta et al. 2006).

To enable and encourage parents' (and notably mothers') active involvement in the labor market, family-friendly policies constitute an integral part of Denmark's social welfare system (OECD 2006). These include, among other things, a large-scale public ECEC system aimed at children below school age, so that even men and women with very young children can pursue more continuous and full-time careers (Datta Gupta et al. 2006; Blossfeld et al. 2015). In this manner, the realization of gender equality in both paid and unpaid work continues to be assured, as Meyers and Gornick (2003: p. 380) point out: "ECEC has implications for several dimensions of gender equality. As the primary caregivers for children in all industrialized countries, women with young children often pay a 'child penalty' in the form of reduced labor force participation relative to otherwise similar women without young children. Due at least partly to interruptions in their employment histories, many mothers also pay a 'family penalty' in the form of lower wages (relative to non-mothers), and that persists beyond their years of intensive caregiving. With weaker labor market attachments and more hours spent in the home, women across the industrialized countries also assume a disproportionate share of unpaid household labour – including both carework and housework – relative to men".

Although Denmark has a tradition of ECEC extending back more than a century, the major expansions have taken place since the 1960s[23], when women's participation in education and the labor force increased rapidly, as did the need for daycare (Childcare Education Services Sector 2003; Hiilamo 2008). It can hence be said that the country's ECEC policy is "[…] closely connected to the development of the tax-based Danish welfare state, one that features both men and women employed on full-time basis and

[23] Childcare evolved as a public and political issue in the Nordic countries largely after World War II. In 1964, Denmark became the first country to legislate on daycare provision, followed by Finland, Iceland and Sweden (1973), and later Norway (1975) (Hiilamo 2008; Gíslason and Eydal 2011).

taxes that are used to finance the extensive public health, education, and social systems" (Winther-Lindqvist 2013: p. 1). The diverse state-run ECEC services thereby evolved for a variety of reasons, such as facilitating parents' labor force participation, promoting gender equality, and enhancing children's development (Hiilamo 2008). Yet what exactly characterizes today's much-praised, publicly-organized system of ECEC in Denmark?

Characteristic features of the public Danish early childhood education and care system

A first distinctive feature is that, in Denmark, all children older than 26 weeks[24] are guaranteed a legal right to publicly subsidised ECEC provision until they reach the age of six (when compulsory schooling begins) (European Commission et al. 2014). Children's eligibility for ECEC is thereby not influenced by their parents' transition in and out of the labor market, since it is illegal to exclude certain groups of children from participating. The main responsibility for monitoring, organizing, and delivering the services is decentralized to the 98 municipalities[25], with primary emphasis on full-time[26] rather than part-time childcare placements. In order to equalize access to good quality daycare across families with different financial resources, funding mainly comes from local taxation and central government grants, complemented by parent contributions[27] which are capped at 30 percent of running costs (OECD 2001b; Datta Gupta and Simonsen 2010; Gíslason and Eydal 2011; Ciccia and Bleijenbergh 2014; EURYDICE 2014). As the name already indicates, another characteristic of ECEC services is that they have educational, social, and care-related purposes[28]. Nevertheless, because of the crucial importance of the first years of life for a child's learning and development of competences, there is a clear trend towards putting a stronger emphasis on the educational[29] aspects of ECEC (Ministry of Social Affairs and Ministry of Education 2000; Jensen 2009; Gíslason and Eydal 2011).

[24] Hence, the legal entitlement takes effect immediately after the end of childcare leave (European Commission et al. 2014).
[25] In 2007, the structure of the Danish public sector was comprehensively reorganized: The previous 274 municipalities were merged to 98, and instead of 14 counties 5 regions were established (Ministry of Education and Rambøll 2011).
[26] Full-time placements in public ECEC comprise more than 30 hours a week (Mills et al. 2014)
[27] Parents are expected to co-finance the public provision of ECEC. Price variation is calculated from three variables: the municipalities themselves, parents' income, and the presence of siblings (Simonsen 2010; European Commission et al. 2014).
[28] Since 2004, there has been a national curriculum which requires the implementation of 6 dimensions of aims and content (expressed as general themes): 1) Personal competences, 2) social competences, 3) language, 4) body and movement, 5) nature and natural phenomena, and 6) cultural forms of expression and values (Jensen et al. 2010).
[29] ECEC can be considered as the child's 'first school' since "[…] it is an institution, which has a curriculum or guidelines in how to influence children's learning and development, and there are professionals working to make it happen" (Early Years Transition Programme 2010: p. 8).

Furthermore, it is important to note that, within the public Danish ECEC system, childcare offers basically come in two forms, namely as public family daycare and public center-based daycare. Public family daycare, predominantly serving as a supplement to public center-based daycare, means that children are looked after in the carer's own home. The carers are authorized and employed by the municipality; there may be up to five children in each home (Leira 1994; Simonsen 2010; Bauchmüller et al. 2011). Family day-carers must not fulfill special formal qualificational requirements (only personal skills, such as being a responsible person and having some experience in taking care of children), but receive at least three weeks training and have access to intensive supervision and voluntary courses in childcare (OECD 2001a; Childcare Education Services Sector 2003). In contrast, public center-based daycare takes place in an institutional setting which is usually located in large facilities. The child-to-staff ratio is around 6:1, and caregivers must be qualified pedagogues who have gone through three and a half years of full-time training[30] (Kampmann and Nielsen 2004; Datta Gupta et al. 2006; Gíslason and Eydal 2011). Since the allocation of places in public ECEC is subject to local autonomy, parents cannot freely choose a certain type of daycare (Simonsen 2010; European Commission et al. 2014). However, when sending their application to the municipality, parents have the opportunity to indicate whether they favor public family daycare or public center-based daycare; if possible, their preferences will be accommodated. Parents may also decline the offer they are given and decide to wait for the next open slot of the preferred daycare type (Datta Gupta and Simonsen 2010).

Ultimately, Danish children below compulsory school age are usually either enrolled in some form of public ECEC or in ECEC provided by the private sector. The few private alternatives to public ECEC that exist must adopt the same standards as those in the public sector. Since private ECEC services are not subsidized directly by public authorities, they are solely funded by parent contributions, and sometimes private grants. However, municipalities may decide to sponsor part of the costs should the parents choose private ECEC (Ministry of Social Affairs and Ministry of Education 2000; Simonsen 2010; Esping-Andersen et al. 2012). As will be shown next, only a small share of preschool children in Denmark does not take part in any type of ECEC provision, (that is, neither in public nor in private ECEC) although the attendance of private ECEC constitutes more the exception than the rule.

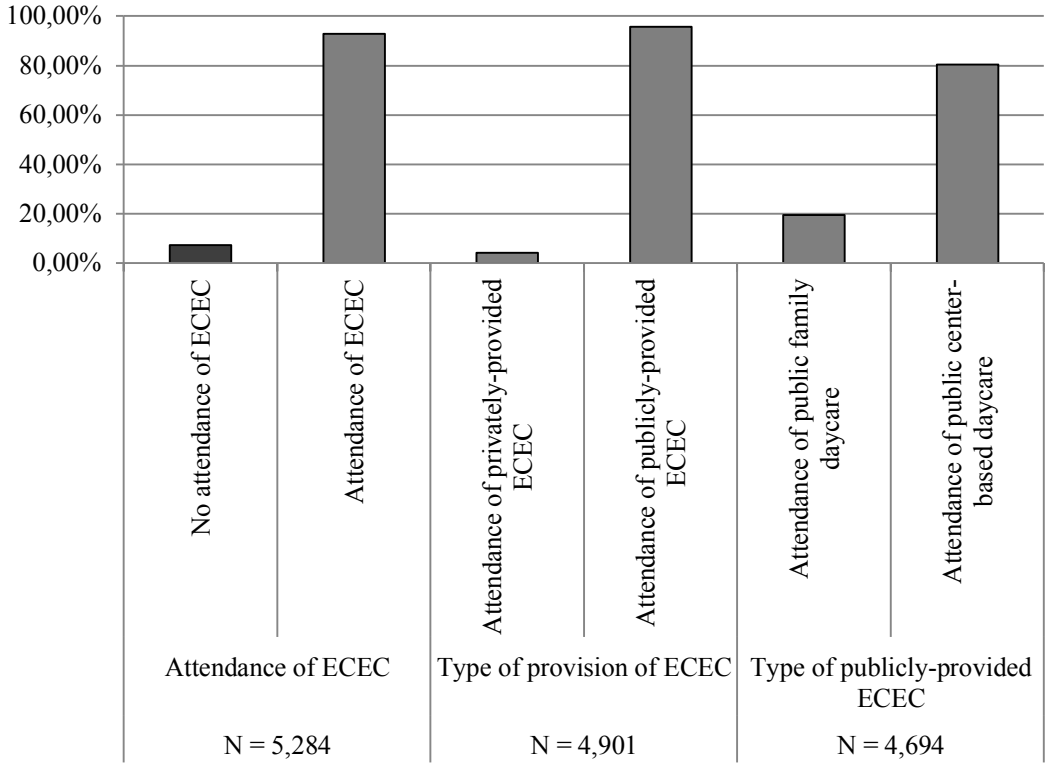
[30] As the literature indicates that well-trained caregivers result in higher quality care, public center-based daycare could be considered high quality care, whereas public family daycare would therefore constitute care of lower quality (Esping-Andersen et al. 2012).

In Denmark early childhood education and care services are highly utilized

To conclude this excursus, I would like finally to examine the extensive use of ECEC services in Denmark on the basis of some descriptive analyses. For this purpose, I apply survey data that has been gathered within the 'Danish Longitudinal Survey of Children', which is designed and maintained by the Danish National Centre for Social Research. More specifically, I employ data from the second wave of the 'Danish Survey', carried out in 1999. In this survey round, the children in the national representative sample were three years old and hence well into their 'daycare career' (for a more detailed description of the dataset see subsection 1.5). To capture how children of this age are mainly being looked after, the exact question put to the mothers as primary respondents was: "How is the child usually being cared for in the daytime now?" Children for whom information on the type of care arrangement at age three is missing are excluded from my analysis sample, which therefore consists of 5,284 children. I set up variables that categorize the different indicated types of daycare arrangements in three ways. The first variable serves to assess whether or not the three-year-old children in my sample attended ECEC, thus distinguishing between 'no attendance of ECEC' and 'attendance of ECEC'. In order to determine the type of provision of ECEC attended at age three, the second variable comprises the categories 'privately-provided ECEC' and 'publicly-provided ECEC'. Finally, depending on the type of publicly-delivered ECEC children of this age attended, the third variable differentiates between 'public family daycare' and 'public center-based daycare'. Figure 2.1 depicts Danish children's percentage distribution across the aforementioned types of care arrangements when they were three years of age.

As can be seen, in 1999 the vast majority of three-year-old Danish preschoolers in my sample, namely around 93 percent, attended some type of daytime ECEC, whereas only around 7 percent were generally not participating in ECEC services. Most of the children who were enrolled in ECEC at age three attended publicly-provided ECEC (95.78 percent compared to 4.22 percent in privately-provided ECEC). Furthermore, the figures reveal that around 80 percent of those children who participated in the public system of ECEC entered public center-based daycare, and around 20 percent public family daycare. Altogether, these results illustrate that even though in Denmark ECEC is not compulsory, the rate of attendance – especially among children aged three (or older) – is almost universal.

Figure 2.1: Children's distribution across different types of care arrangements at age three (results as percentages)



Source: Own calculations based on the 'Danish Longitudinal Survey of Children' maintained by the Danish National Centre for Social Research. Adapted from Wahler et al. (forthcoming 2017).

As Saraceno (2011: p. 81) observes, the high utilization of ECEC services during the preschool years "[…] indicates that for this age bracket some kind of formal, non-family care and education is framed[31] as a normal, even necessary, experience and resource for growing up, irrespective of the parents' working status". Furthermore, since Danes are mainly dual-earner families with both parents resuming work soon after childbirth, ECEC provides valuable support for the reconciliation of work and family life, in this way encouraging in particular women's labor force participation and economic independence

[31] Saraceno (2011: p. 87) mentions some interesting evidence of the existence of nationally specific gender cultures regarding the labor market participation of mothers with young children, thereby also referring to Denmark: "In the 1999 European Value Survey, the level of moderate or strong agreement with the – overly generic – statement, 'a preschool child is likely to suffer if the mother works', ranged from over 80 percent in Malta, Austria and Italy, to 17 percent in Denmark. Only in 10 countries out of 30 did fewer than 50 percent of respondents agree. These included, in addition to Denmark and with substantially higher levels of agreement, Sweden, Finland, Ireland, the UK, the Netherlands, Spain, Slovenia, Romania and the Czech Republic".

(Saraceno 2011). Since public responsibility[32] for childcare is a long-held principle in Denmark, it is little surprising that privately-delivered ECEC only plays a marginal role (Ciccia and Bleijenbergh 2014). As was to be expected, although ECEC provision is mixed with both private and public suppliers, parents extensively opt for daycare within the non-profit driven public ECEC system. Here, private family daycare does not form a significant part of the public organized ECEC sector and primarily serves to supplement[33] public center-based daycare.

As a final remark, it can be stated that (notably public) ECEC is a very important institution in Denmark, whereby municipalities are also obliged to provide formal childcare services for school-aged children, resulting in a comprehensive out-of-school-hours care system[34] (Plantenga and Remery 2013). The latter comprises both centers specifically for after-school care as well as school-based leisure time care[35] (Abrahamson and Wehner 2008).

After the brief excursus on Danish ECEC for young children below mandatory school age, I shall now come to the actual topic of this subsection, namely the role of gender for children's pathways in tracked Danish post-compulsory education and training. With this in mind, I continue with a description of Denmark's current mainstream education and training system (depicted in simplified form in Figure 2.2 below), encompassing both non-tracked compulsory primary and lower secondary education, as well as tracked non-compulsory upper secondary and tertiary education.

[32] Nevertheless, as Kampmann and Nielsen (2004: p. 651) note that "[...] it would be misleading to say that the child has shifted from the family domain to the welfare state domain. Rather the child has become the focus of a shared or cooperative project between parents and the welfare state, a project that has become increasingly ambitious". To hold the workplace responsible for childcare is rarely desired in Denmark. As a study which included 3,000 public as well as private companies has shown, only 1 percent assisted with childcare by having daycare facilities on site (Fine-Davis et al. 2004).

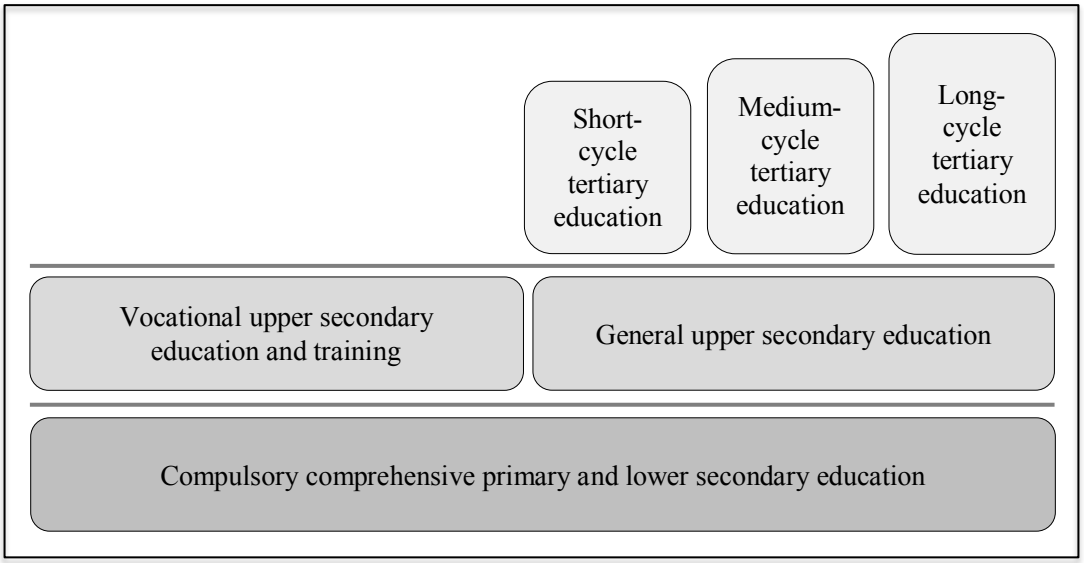
[33] When, in 1964, the law on childcare was written, public family daycare was intended to be a stopgap solution – the future ideal was that all children would be cared for by professionals in public center-based daycare. However, "[…] what was presented as an emergency solution became a structural local practice" (Kremer 2007: p. 188).

[34] Around 82 percent of children in school age attend public organized out-of-school services (Statistics Denmark 2015).

[35] The introduction of the school-based leisure time activity schemes in the early 1990s is said to be a first step in the direction towards the so-called 'all-day school' common in other countries in Europe (Abrahamson and Wehner 2008).

2.1.3 Organization of the mainstream education and training system in Denmark

Figure 2.2: Simplified overview of the Danish mainstream education and training system



Source: Own illustration.
Note: The diagram only shows levels, not extent of activities.

Primary and lower secondary education

The move from ECEC to formal schooling[36], and thus to the next stage of the child's learning and development, is a major transition children face in their early years (European Commission et al. 2014). In Denmark, compulsory primary and lower secondary education typically spans the ages of six to 16, being offered both by public and private schools (OECD 2001b). The latter, also referred to as 'free' or 'independent' schools, constitute a recognized alternative to the public school system. What is characteristic of the private schools (the '*Friskole*'), which are financed by state subsidies and tuition fees, is that they are self-governing institutions (owned and managed mainly by parents) and often pursue specific societal ideologies or pedagogical principles (Shapiro 2004; Cederberg and Lingärde 2008; Ministry of Children and Education 2012). Their structure is similar to that of public schools, whose educational contents and goals they are required to meet (Hörner et al. 2007; Danish Agency for International Education 2010). Since it is ten years of education itself that is compulsory, and not schooling per se, parents may also decide to teach their children at home under the condition that the teaching is directly comparable to the standards in public schools (EURYDICE 2006; Cederberg and Lingärde 2008).

[36] According to Statistics Denmark (2015), children who started primary education in Denmark in 2012 will, on average, proceed through 18.4 years of full-time education during their life (compared with an OECD average of 16.9 years in 2012).

The great majority[37] of Danish children, however, attend state-governed public municipal schools (the '*Folkeskole*'). These fall under the responsibility of the 98 municipalities, are open to all students, and are free of charge (Hörner et al. 2007; Ministry of Education and Rambøll 2011). Parents have a free choice of public school for their child rather than being assigned to one because of regional proximity (Cederberg and Lingärde 2008; Ministry of Education and Rambøll 2011). The *Folkeskole* comprises ten years of unified primary and lower secondary education in classes 0 to 9 and a one-year optional 10th class (Ministry of Education and Rambøll 2011). This reflects a recent change in school legislation which came into force in 2009, specifying that the previously optional one-year of pre-primary education should be mandatory and renamed to class 0, thus extending the duration of compulsory education from nine to ten years (EURYDICE 2006; Cederberg and Lingärde 2008; EURYDICE 2008; Shewbridge et al. 2011). The objective of this change is to strengthen the introductory period in primary schools, as well as to start learning at an earlier stage (Ministry of Education and Rambøll 2010). As a voluntary option the 10th class can, for example, be used to improve final examination grades or take more time to find out which kind of subsequent upper secondary education to enroll in (OECD 1999b; Cederberg and Lingärde 2008; Danish Agency for International Education 2010; Olofsson and Wadensjö 2012).

As already indicated, the municipal *Folkeskole* is a coeducational, integrated school without tracking; children are taught in mixed-ability classes grouped by age and stay together during the whole period of compulsory education (OECD 1999b; EURYDICE 2006). In class 0, the teaching is not divided into subjects but focuses on diverse fixed themes like for example language and methods of expression, creativity, or social skills (The Danish Ministry of Education 2008). The teaching from class 1 is then given within three obligatory subject blocks (supplemented with optional subjects): subjects in the humanities, practical/creative subjects, and natural science subjects (The Danish Ministry of Education 2008; Ministry of Education and Rambøll 2011). There is continuous evaluation throughout the *Folkeskole*, for instance in the form of written student appraisal plans or computer-based tests, and progression to the next higher class is usually automatic (EURYDICE 2006; EURYDICE 2008). Moreover, the stages of primary and lower secondary education are not organizationally separated and there are no tests or examinations between them (Gries et al. 2005; EURYDICE 2008). Until class 7, students

[37] In 2010, only around 15 percent of all students of compulsory school age in Denmark were enrolled in private schools (Rasmussen and Moos 2014). The prevalence of home-schooling is very low.

and their parents are regularly provided with feedback from teachers on the performance in each subject, but without grading; only from class 8 do children receive grades by teachers (EURYDICE 2006; Schindler Rangvid 2014). The 7-point grading scale comprises five grades indicating a passing level (12, 10, 7, 4 and 02) and two grades indicating a non-passing level (00 and -3) (The Danish Ministry of Education 2008). This grading system is applied in state-regulated education at all levels, i.e. also in upper secondary and tertiary education (Danish Agency for Higher Education 2014).

At the completion of the 9th class, students must pass final examinations (this is the Leaving Examination or LE) in seven subjects to receive the corresponding school leaving certificate, which in principle gives admission to all types of education and training at upper secondary level (OECD 1999b; EURYDICE 2006; The Danish Ministry of Education 2008; Danish Agency for International Education 2010). Students who remain in the *Folkeskole* for the optional 10th class may take the LE for a second time, or may finally sit for the Advanced Leaving Examination (ALE) in five subjects in order to qualify for an education at upper secondary level (OECD 1999b; EURYDICE 2006).

Upper secondary education

After leaving non-tracked compulsory primary and lower secondary education at around age 16, students can decide if they want to enter the labor market[38] or – on the condition that they successfully obtained the school leaving certificate at the end of class 9 or 10 – continue their education by enrolling in some kind of post-compulsory upper secondary education (Cederberg and Lingärde 2008; Holm et al. 2013). Some private schools can also be found at this stage of the Danish mainstream education and training system; they lead to the same qualifications and may impose fees. However, for the most part, upper secondary education is carried out by state-regulated public schools, without charging any money for it[39] (EURYDICE 2009). The different programs offered at upper secondary level pursue quite distinct objectives, being either oriented towards preparation for the labor market or for tertiary education. Accordingly, young people have to choose between two main tracks, namely vocational upper secondary education and training on the one hand, and general upper secondary education on the other (Jørgensen and Lindvig 2011).

[38] The aim of compulsory basic education is, however, to set the course for further education rather than for employment (Cederberg and Lingärde 2008; Holm et al. 2013)

[39] Upper secondary students over 18 years old are furthermore entitled to allowances from the state's educational grant and loan scheme (Cort 2002).

Vocational upper secondary education and training (also referred to as 'VET') has the primary purpose of providing vocational qualifications that are recognized on the labor market and allow direct entry into skilled employment (Cort 2002; Jørgensen 2011). This type of upper secondary education is delivered by vocational colleges and, after reforms in 2000 and 2008, is composed of a basic course and a main course (Hörner et al. 2007). There are 12 vocational basic programs, such as for example building and construction, human food, media production, or transport and logistics, each of them leading to a wide range of specializations in the main course. The introductory basic course is school-based, broad in scope and lasts between 20 and 25 weeks (Danish Agency for International Education 2010; Thorbjørn 2012). During the period of basic education, students must decide on their vocational orientation for the subsequent main course. This specialized course has a typical duration of three to three and a half years and is based on an apprenticeship contract. It is characterized by alternating periods of teaching at the vocational college and practical in-company training, with companies paying wages to apprentices. The certificate awarded after completion of the basic course, as well as an apprenticeship contract, are prerequisites for the main course (Jørgensen and Lindvig 2011; Olofsson and Wadensjö 2012). Students who complete a program within the vocational upper secondary track are well-prepared for a career in a specific trade or industry, but do not qualify for tertiary education (Gymnasieskolernes Rektorforening 2013).

General upper secondary education, on the other hand, predominantly aims at providing students with general and theoretical qualifications recognized by the institutions of tertiary education, hence preparing for studies at the tertiary level (Cort 2002; Jørgensen 2011). This type of upper secondary education comprises four different programs, named after the final examinations with which they conclude: 1) the three-year upper secondary school leaving examination (STX), 2) the two-year higher preparatory examination (HF), 3) the three-year higher commercial examination (HHX) and 4) the three-year higher technical examination (HTX) (Ministry of Children and Education 2012). Following a reform in 2005, the four pathways (STX, HF, HHX, and HTX) have been structured into a six month basic course common to all programs, which is followed by a two and a half year-long specialized course (OECD 2013). The STX and HF programs are provided at the *Gymnasium* and are more academically oriented, offering a wide variety of subjects in the fields of humanities, natural sciences, and social sciences. Whereas the STX program builds on the 9th class of the *Folkeskole*, the HF program functions as a shorter alternative to it for those who attended the optional class 10 (EURYDICE 2006; Danish

Agency for International Education 2010). The HHX and HTX programs, both based on the 9th class, are provided by commercial and technical colleges and are more strongly vocationally oriented. However, they do not give direct access to any specific occupation. Combining general subjects with either commercial or technical subjects, these programs were introduced during the 1970s and 1980s with the intention to weaken the division between the two tracks of vocational and general upper secondary education. Moreover, they were intended to attract students from less advantaged social origins (CEDEFOP 2012; Holm et al. 2013). In the end, all four programs from the general upper secondary track satisfy the entrance requirements for tertiary education (Nuffic 2013).

Tertiary education

Students, usually at the age of 19 or 20, who fulfill the necessary admission criteria[40] and aspire to progress in the educational system may enroll in diverse programs at tertiary level (Danish Agency for International Education 2010). Institutions offering tertiary education in Denmark are public and supervised by their regulating ministries, but have a high degree of academic autonomy. They do not require tuition payment[41] (OECD 2013; Ahola et al. 2014; Nielsen and Andreasen 2015). As part of the Bologna process, the bachelor-master degree structure – as well as the European Credit Transfer System (ECTS)[42], to measure study activities – was introduced in Danish tertiary education since the late 1990s (Danish Agency for International Education 2010; Ahola et al. 2014). Although all of the tertiary education programs equip individuals with occupational competences that are directly oriented towards certain professions, their focus is either more on professional or on academic education. In addition, they are of varying duration and based at different types of public institutions (Cort 2002). Tertiary education programs can thus be broadly divided into professionally-oriented short and medium-cycle programs at the non-university level on the one hand, and research-based long-cycle programs at the university level on the other (CEDEFOP 2012).

[40] These admission criteria may besides a general upper secondary qualification also involve a specific combination of subjects or a certain level of grades (Danish Agency for International Education 2010).
[41] Moreover, students in tertiary education have the opportunity to receive financial support in the form of public grants and loans during their studies (Ahola et al. 2014).
[42] One year of full time study corresponds to 60 ECTS credits (Danish Agency for International Education 2010).

Short-cycle tertiary education consists of two to three year academy profession programs which can be attended at academies of professional higher education. These institutions educate students mainly in commercial and technical fields such as hotel and tourism management, marketing, construction, computer science, or IT. The programs combine theoretical studies with a practically oriented approach and qualify graduates for the performance of practical, vocational tasks on an analytical basis (Beerkens-Soo and Vossensteyn 2009; Danish Agency for International Education 2010).

Medium-cycle tertiary education comprises three to four year professional bachelor programs offered by university colleges, which are not university institutions, and exhibit only a fraction of the research activities undertaken at universities. Fields of study include, for example, police work, journalism, childcare or social work, primary and lower secondary school teaching, nursing, or physiotherapy. Besides theoretical studies there is a strong emphasis on professional practice through work placements within the programs, aiming at the practical application of the theoretical knowledge gained (Shapiro 2004; Danish Agency for International Education 2010; Ahola et al. 2014). By the completion of a top-up program, holders of an academy profession degree may also attain a professional bachelor's degree (EVA 2009).

Long-cycle tertiary education, finally, includes the three year bachelor programs, two year master programs, and three year PhD programs provided by universities. These are research-intensive programs that build on one another, educating students towards a broad range of occupations in scientific fields such as natural and social sciences, law, the humanities, or psychology (Danish Agency for International Education 2010; Shapiro 2004). Holders of a bachelor's degree have the right to obtain a master's degree and thereafter a PhD degree, representing the highest educational level within the Danish mainstream education and training system. Due to the binary division between professionally-oriented and research-based qualifications, graduates from professional bachelor programs are not automatically granted access to a master's program at university, but may be required to complete supplementary courses beforehand (EVA 2009; Ahola et al. 2014).

Having now comprehensively described the organization of Denmark's mainstream education and training system, I next discuss the implementation of tracking within Danish post-compulsory upper secondary and tertiary education, thereby first considering this institutional characteristic from a broader point of view. As noted by Latina and Ramirez (2012: p. 2), an investigation of the impact of tracking on students' educational

outcomes "[…] is an empirically difficult question, because disentangling the two phenomena is hard […]". Since my aim here is to look at the role of gender for children's pathways within tracked Danish post-compulsory education and training, rather than examining the effect of tracking itself, in the following I shall comment only briefly on this topic.

2.1.4 Tracking at Danish post-compulsory upper secondary and tertiary level

A general view on the issue of school design, tracking, and educational outcomes

Comparative research (e.g. Blossfeld and Shavit 1993) has revealed that the level of inequality in educational outcomes differs across Western societies, showing that alongside individual-level determinants – such as gender or social origin – school design is also related to the differential educational attainment of children (Bol et al. 2013). By school design I mean the way in which countries organize their educational systems, starting from primary and ending with tertiary education (Buchmann and Park 2005; Brunello and Checchi 2006). Concentrating on the relevance of social origin, Bukodi et al. (2015: p. 7) claim that if the various institutional characteristics of educational systems were really meaningless "[…] one should find near-constancy in the association between social origins and educational attainment, and the effect of social origins should exhibit a uniform pattern across countries, which is not unequivocally the case. Insofar as institutions alter the costs and benefits associated with educational choices, and increase or decrease the probability of succeeding in a specific educational pathway, they constitute a potentially mediating variable in explaining the relationship between social origins and educational outcomes". In this regard, scholars have particularly acknowledged the use of tracking as an important feature in the institutional set-up of educational systems which affects students' achievement and explains cross-national variation in it (Hadjar 2011; Bol et al. 2013).

Tracking, also defined as the level of stratification of an educational system, refers to the assignment (for instance based on teachers' recommendations) or self-sorting of children to distinct programs at the same time point in their educational career. Typically, the diverse pathways differ in the curriculum offered and are hierarchically ranked (i.e. it is clear which is the 'lower' and which is the 'higher' track). Since the allocation to tracks is non-random, school tracking introduces (self) selection into the educational process, whereby the tracking practices may occur in a variety of ways: while in the US tracking corresponds to grouping students by ability within a comprehensive school system

('between-class tracking'), in the European context tracking mainly takes place in the form of sorting students into separate types of schools (typically specializing in vocational and general education) – for the full curriculum and for multiple years ('between-school tracking') (Brunello and Checchi 2006; Bol and van de Werfhorst 2013; Bol et al. 2013). Although tracking predominantly takes place in secondary education, it exists in tertiary education as well (Bol and van de Werfhorst 2013). There are of course also educational systems with minimal or no tracking, where all students attend the same classes in the same school, irrespective of their ability level (Leicht 2013). Given that tracking is not a binary variable but rather graduated, school systems can be more or less tracked, whereby those "[…] with a high level of formalized tracking would thus feature earlier selection, a tracked curriculum which lasts longer, and a greater number of tracks" (Bol et al. 2013: p. 4).

Discussions on the application of tracking in education have typically been controversial, since it yields two significant consequences: effects on educational productivity and effects on educational inequality. Proponents argue that tracking enables students to pursue an education that best suits their interests and skills, thereby fostering learning efficacy and raising average outcomes[43]. Critics of school stratification, on the other hand, claim that track assignment interacts with personal characteristics that are themselves the basis for inequality, and thus leads to more inequality in the dispersion of outcomes. A third perspective is that the effect of tracking on students' educational success is largely neutral (Gamoran and Mare 1988; Hindriks et al. 2010; Bol et al. 2013). The extensive empirical literature on educational tracking, however, has documented that school stratification, in particular when it starts in the early years[44] of formal education, exacerbates educational inequalities, and has little effect on average achievement (Leicht 2013). Thus, "[…] untracked schools are both more equitable than and at least as academically effective as tracked schools, leaving arguments in favour of tracking on tenuous footing" (Leicht 2013: p. 4).

[43] Thus, the "[…] major pedagogic rationale for academic tracking is that students differ in their academic goals and the environments in which they learn best. Ideally, a system of academic tracking matches students' aptitudes with the objectives and learning environments to which they are best suited" (Gamoran and Mare 1988: p. 2).

[44] "Postponing the point in the educational career at which children enter different tracks and where educational decisions have to be made will improve the ability to anticipate future educational performance. The future to be anticipated is shorter and more experience with past educational performance is available to form respective expectations for the future. The working class should profit more from such measures because the upper classes will have better knowledge about educational requirements and more confidence to fulfil them from the beginning" (Breen quoted in Brunello and Checchi 2006: p. 3).

The implementation of tracking within Danish post-compulsory upper secondary and tertiary education

Based on their distinctive features, educational systems around the world can be clustered into different regions. The Danish educational system is part of the Scandinavian cluster, with its values of equality and inclusiveness, and therefore exhibits several characteristics fostering equity in education. These arise from the egalitarian, social-democratic type of welfare regime that understands education as an important instrument for creating equal opportunities for all citizens (Hörner et al. 2007; Wiborg and Cort 2010; Jørgensen 2011). Examples of such attributes are the instruction in mixed ability classes during compulsory schooling as well as its relatively long duration, no tuition fees at all levels of the public school system, or the availability of generous grants and loans to students enrolled in upper secondary and tertiary education (Arendt 2008).

However, despite the major goal of providing equal educational opportunity for everyone, at some stage of their school career students in Denmark are streamed into distinct educational tracks located in separate institutions (the aforementioned 'between-school tracking') (Leicht 2013). Without going into too much detail as regards the development of the Danish educational system, I would like to point out that it has undergone substantial changes over the past 50 years, with two trends becoming increasingly apparent: on the one hand, compulsory primary and lower secondary education has been increasingly de-tracked. Starting in the 1960s, tracking during the compulsory school years became less prevalent, and with the adoption of a new act on the Folkeskole in the 1970s it was abolished altogether[45] (EURYDICE 2011; Karlson and Holm 2015). On the other hand, since then, upper secondary and tertiary education has become more and more differentiated, "[…] and the requirements for moving further in the educational system have become increasingly complex" (Karlson and Holm 2015: p. 129).

As described in point 2.1.3, after ten years of non-selective, compulsory comprehensive education until around the age of 16, the Danish mainstream education and training system splits pupils up in two main parallel branches of study at the upper secondary level: vocational upper secondary education and training, and general upper secondary education. The two tracks pursue almost[46] entirely different goals mirrored in the type of

[45] However, ability grouping within subjects persisted until the beginning of the 1990s (Karlson and Holm 2015).

[46] Although the aims and purposes of the two upper secondary tracks are different, both share the common objective of supporting students' personal development and their democratic engagement in society, as well as preparing them for lifelong learning (Jørgensen 2011).

curriculum offered, with their programs emphasizing either vocational education (which gives access to employment) or academic education (which prepares for tertiary education) (Colding 2006; Holm et al. 2013). Hence, in contrast to – for example – Norway and Sweden, where the upper secondary level is also relatively inclusive, Denmark demonstrates the most 'classic' form of a dual system of vocational upper secondary education and training (similar to the German model), being organized separately from the general upper secondary track. Although, especially in the 1970s, there have been attempts to overcome this separate system, the boundary between the two main upper secondary tracks is still in existence today. The reasons why most of the political parties in Denmark, as well as the dominant labor market organizations, wish to maintain[47] this system are its efficiency in creating successful school-to-work transitions, high rates of employment, and great flexibility on the labor market (Wiborg and Cort 2010; Jørgensen 2011). However, the other side of the coin is that, under this system, only a general upper secondary degree provides eligibility for tertiary education programs, meaning that secondary school tracking in Denmark puts "[…] extraordinary emphasis on one focal decision point in the student's educational career […]" and is likely to exert a non-negligible influence on inequalities in educational outcomes (Colding 2006: p. 343; Jørgensen 2011; Holm et al. 2013).

Those students who qualify for further studies at tertiary level meet the next decisive threshold within the Danish educational system around the age of 19 or 20, namely at the time of the transition from general upper secondary to tertiary education (Jørgensen 2011). Again, the system contains several main parallel branches of study, which can be described as either professionally-oriented programs at the non-university level (short and medium-cycle tertiary education) or research-based programs at the university level (long-cycle tertiary education). In Denmark, tertiary education is thus characterized by a binary structure, with little mobility between the two major tertiary education institution types (Ahola et al. 2014). On the other end of the scale, Sweden counts all post-secondary educational programs as university education; Norway, Finland, and Iceland lie between these extremes. Danish tertiary education has traditionally been strongly institutionally segmented, and despite some efforts over the last years to increase collaboration and mobility between non-university-level and university-level institutions, the two tracks are still quite separate (Fägerlind and Strömqvist 2004; Ahola et al. 2014).

[47] However, in recent years efforts are being made to create pathways between the vocational and the general upper secondary track, so-called 'hybrid qualifications' (Wiborg and Cort 2010).

As has been made clear, within a given educational institutional structure the four main tasks of education listed at the very beginning of this subsection can hardly be carried out completely independently of one another. Tracking in Danish post-compulsory upper secondary and tertiary education may, on the one hand, optimize efficient learning and improve labor market allocation (thereby fulfilling the 'skill optimisation task' as well as the 'labor market allocation task'); on the other hand, it may be likely, together with individual-level factors, to impact on students' educational achievements (in this way being less able to meet the 'equal opportunities task') (Bol and van de Werfhorst 2013; Van de Werfhorst 2014a).

2.1.5 Research objectives and methodology

Concrete research objectives of my empirical analyses

The preceding theoretical considerations have shown that within Denmark's mainstream education and training system, which is located in an institutional environment strongly aimed at providing all male and female citizens with equal educational opportunities, heterogeneous students are initially mixed in compulsory comprehensive schools (Ariga and Brunello 2007). After these ten years of basic education, the Danish transition system then has two main thresholds "[…] where individual decision making and institutional selection processes take place […]"; firstly, the step from non-tracked compulsory primary and lower secondary education to the vocational or the general track of upper secondary education, and later the move from general upper secondary education to non-university-level or university-level tertiary education (Jørgensen 2011: p. 3).

In answering the guiding question of subsection 2.1, asking about the role of gender for children's pathways in tracked Danish post-compulsory education and training, I aspire to record gender disparities emerging at these two key qualification thresholds[48]. Thus, while many studies focus mainly on differentiated upper secondary education, my analyses extend to school stratification at the tertiary level (Brunello and Checchi 2006). The empirical analyses within this part of my work pursue the following five specific research objectives:

[48] It is, however, not my aim to test the causal mechanisms of tracking on educational inequalities at the micro level (Bukodi et al. 2015). Moreover, I am interested in detecting gender-specific differences with regard to the main tracks existing at upper secondary and tertiary level, instead of focusing on the differentiation of students within these tracks (Bol and van de Werfhorst 2013).

1. In how far do male and female students not complete any kind of upper secondary education in the first years after successful graduation from compulsory primary and lower secondary education?
2. Are there gender-based differences regarding the initial completion[49] of a program within the track of general upper secondary education instead of a program within the track of vocational upper secondary education and training?
3. To what extent do students of both genders who initially completed vocational upper secondary education and training 'upgrade'[50] their level of upper secondary education by accomplishing a general upper secondary education later on?
4. Are male and female students who achieved a general upper secondary education enrolling equally in some kind of tertiary education?
5. Is there a gender imbalance among those students who initially enrol in a tertiary education at the university level instead of the non-university level?

Methodology

To examine my research objectives, I use various sources of population-based Danish administrative data, including the 'Student Register'. The data, obtained once per year from 1980 onwards, is maintained by Statistics Denmark and very suitable for carrying out longitudinal analyses of individuals' educational histories and attainments (a detailed description of the applied databases can be found in subsection 1.5).

Although researching the role of gender for children's post-compulsory education and training trajectories is obviously clearly prioritized, I consider it reasonable to also look at the influence of social origin as another prominent factor in the distribution of educational outcomes. Claire (2004: p. 9) aptly notes that none "[…] of us is just female or male – we grow up within a certain class with all its attendant subtle cultural influences, even if, as children – or as adults – we have made 'border crossings' […]". Consequently, no person is without gender or social class background, and as such, gender-specific differentials in educational attainment should not be considered in isolation from other[51] major structures of inequality (Claire 2004). In this respect, past research has emphasized the parents' education as an important determinant for their children's educational success (Ermisch

[49] I study initial completion (rather than enrollment) since additional analyses (not shown here) revealed that many individuals do not necessarily finish the specific track they have first chosen.
[50] Without a discriminatory intention, I thus define vocational upper secondary education and training as the 'lower' and general upper secondary education as the 'higher' track at upper secondary level.
[51] Even though this aspect will not be investigated here, I am aware of the fact that ethnicity also represents a determinant of individuals' educational success.

and Pronzato 2010). Bukodi et al. (2015: p. 4) suggest that parental education "[…] represents educational resources that parents have available to help their children; for example, their ability to create a favourable home-learning environment, including assistance with homework, and to provide their children with informed guidance through the educational system in regard to choice of schools, subjects, courses and examinations to take". For this reason, I use the parents' highest educational attainment as an indicator of students' social origin. Additionally, I incorporate children's mean performance prior to first tracking in my analyses, as measured by their grade point average (abbreviated GPA) at the regular end of compulsory schooling in class 9[52]. This enables me to assess the 'net effect' of social origin. Furthermore, in doing so I take account of the accepted fact that boys' and girls' achievement in compulsory primary and lower secondary education is related to the level of education they ultimately attain (Buchmann et al. 2008). Hence, for all of the research objectives I pursue here, my explanatory variables comprise students' gender, students' social origin indicated by the parents' highest educational level, and finally students' pre-tracking performance in terms of their GPA in the 9th class.

Due to the circumstance that information on students' GPA in class 9 is available only from 2002 onwards, and because a sufficiently large observation window is needed, the sample is restricted to Danish students[53] who graduated from compulsory school in 2002 and 2003. Since the time frame is relatively short, I study initial enrolment in tertiary education rather than the completion of a program at tertiary level. Moreover, it is important to note that the analyses are confined to students who qualified for upper secondary education by having achieved the minimum passing grade[54] (or better) in the final examinations at the end of the 9th class. The basic[55] analysis sample thus includes a total of 80,599 youths[56] born between 1985 and 1988.

As research methods for each of the five research objectives descriptive and multivariate analyses (by using logistic regression) are applied. The calculation of the logistic regression models in relation to the first, second, and third research question always

[52] Information on students' GPA in the voluntary 10th class of lower secondary education is not available in the data.
[53] When graduating from basic schooling in 2002 or 2003, the students in my sample must not be younger than 15 years and not older than 17 years.
[54] The minimum passing grade is 02 (grades 00 and -3 indicate a non-passing level).
[55] Because of further selections according to the specific research objective addressed, the analyses conducted within the scope of research questions number 2, 3, 4, and 5 are based on smaller sample sizes.
[56] 39,716 of the graduate students in my basic analysis sample are male and 40,883 are female (see also Appendix F).

follows the same principle. The first model serves to test the influence of students' gender (being male defined as the reference category). This model is then expanded step by step to include students' social origin and pre-tracking performance in the 9th class. In case of research interests number 4 and 5, the only difference is that at the beginning the effect of the type of general upper secondary education students completed is also considered (i.e. whether the general upper secondary qualification is more vocationally[57] or academically[58] oriented, the latter representing the reference category). Concerning parents' highest attained level of education, I adopt the dominance approach (Erikson 1984) and differentiate between 1) compulsory education or less[59], 2) vocational upper secondary education and training, 3) general upper secondary education, 4) short or medium-cycle tertiary education, and 5) long-cycle tertiary education. The baseline level of the parents' highest educational achievement is vocational upper secondary education and training. With regard to students' GPA in class 9 of compulsory schooling, the following performance levels[60] are distinguished: 1) good performance or better[61], 2) fair performance, and 3) minimum acceptable performance. Here a fair performance constitutes the reference category.

The presentation of the descriptive and multivariate results below is structured according to the five previously outlined research objectives, thus comprising the following variables: Non-completion of any kind of upper secondary education; initial completion of the general instead of the vocational upper secondary track; 'upgrading' in upper secondary education; enrollment in some kind of tertiary education; and finally, initial enrollment in a university-level instead of a non-university-level tertiary education.

2.1.6 Results of the empirical analyses

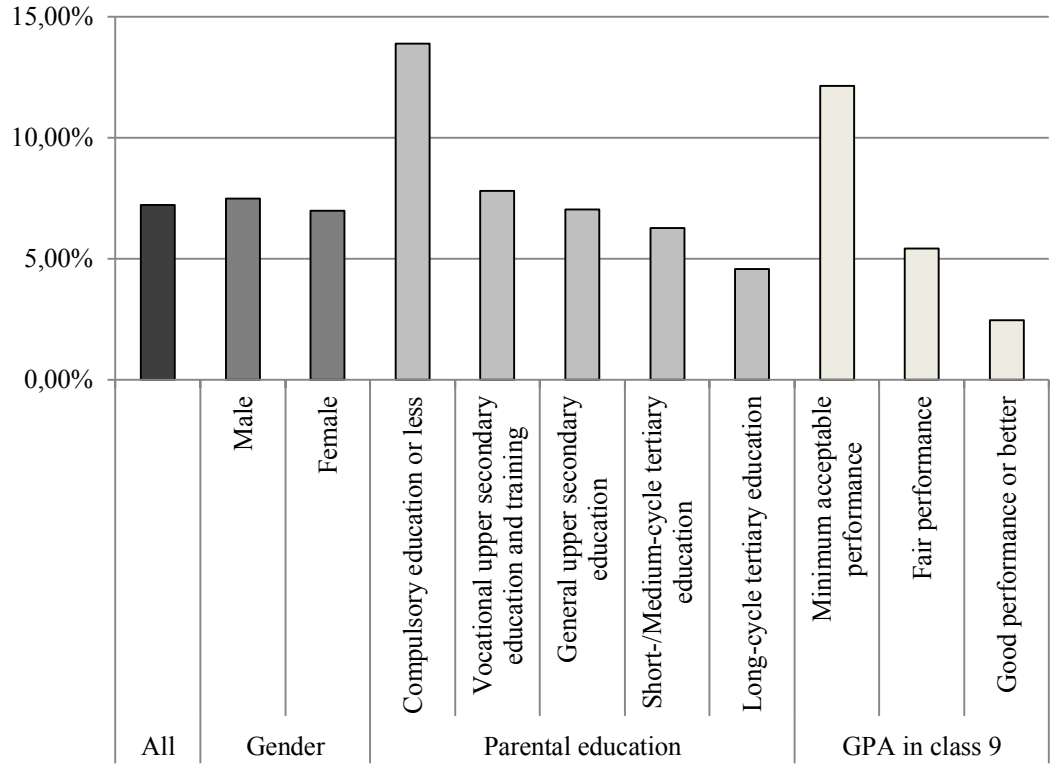
Non-completion of any kind of upper secondary education

Looking at the first research objective, Figure 2.3 shows the descriptive results relating to non-completion of any kind of upper secondary education in the first years after

[57] More vocationally-oriented general upper secondary education refers to the HHX and HTX programs.
[58] More academically-oriented general upper secondary education refers to the STX and HF programs.
[59] I collapsed parents with a pre-primary level of education and a compulsory level of education into one category because the share of parents who did not successfully graduate from basic schooling is very low (only 313 persons, that is 0.96 percent).
[60] The corresponding grades are the following: grades 12, 10 or 7 = good performance or better, grade 4 = fair performance, grade 02 = minimum acceptable performance.
[61] I collapsed school graduates with grade 12, 10 or 7 into one category since the share of children who achieved grade 12 or 10 is very low (only 468 persons, that is 0.58 percent).

successful graduation from obligatory education. All in all, this applies to around 7 percent of the individuals in my starting sample. Broken down by gender, it emerges that more boys than girls do not complete any kind of upper secondary program soon after receiving their compulsory school-leaving certificate (7.48 percent vs. 6.98 percent). Furthermore, students of less educated parents, as well as students who graduated from unified basic schooling with a minimum acceptable performance, are clearly overrepresented in this regard (13.89 percent and 12.15 percent). The higher the parents' level of education and the better the students' GPA in class 9, the lower the percentage of individuals not completing any kind of upper secondary education. Thus, among children of parents with a long-cycle tertiary degree, the share of 'non-completers' is only around 4 percent; in the case of students who demonstrate a good pre-tracking performance (or better) the ratio merely amounts to around 2 percent.

Figure 2.3: Non-completion of any kind of upper secondary education (results as percentages; N = 80,599)



Source: Own calculations based on population register data maintained by Statistics Denmark.

Table 2.1 displays the findings of the equivalent multivariate analyses predicting non-completion of upper secondary education. Across the first two models it becomes obvious that there exist considerable differences by gender: Females are significantly less affected in this regard than males. However, the sign of the coefficients changes and even reverses

when additionally, in the third model, students' pre-tracking performance is taken into account. It can thus be deduced that girls' better chances of at least completing some kind of upper secondary program derive from their higher achievements in mandatory education. Moreover, further analyses (see Appendices A and B) indicate that the female disadvantage in Model 3 is the result of a gender-specific effect of a poor GPA (that is, grade 02) at the end of compulsory education. This is evidenced by the fact that male students who achieved only a minimum acceptable performance in the 9th class are more likely to finish some kind of upper secondary education than female students with the same poor performance level. As regards the role of social origin (Model 2), it can be seen that – compared to students whose parents at most finished vocational upper secondary education and training – students of parents with a general upper secondary degree or higher have a markedly decreased risk of not achieving any kind of upper secondary qualification. For children from less-educated parents (i.e. compulsory education or less) the opposite is true. Parental education loses some of its influence when controlling for students' school grades in Model 3; significant results only remain in cases where the children's parents have the very lowest or highest educational attainments.

Table 2.1: Logistic regression models predicting non-completion of any kind of upper secondary education (results as coefficients; N = 80,599)

	Model 1	Model 2	Model 3
Gender (ref. Male)			
Female	-0.08**	-0.09**	0.06*
Parental education (ref. Vocational upper secondary education and training)			
Compulsory education or less		0.64**	0.53**
General upper secondary education		-0.12*	0.09
Short-/Medium-cycle tertiary education		-0.24**	-0.01
Long-cycle tertiary education		-0.58**	-0.13*
GPA in class 9 (ref. Fair performance)			
Good performance or better			-0.78**
Minimum acceptable performance			0.84**
Constant	-2.51**	-2.42**	-2.91**
Log likelihood	-20909.60	-20687.03	-20105.56

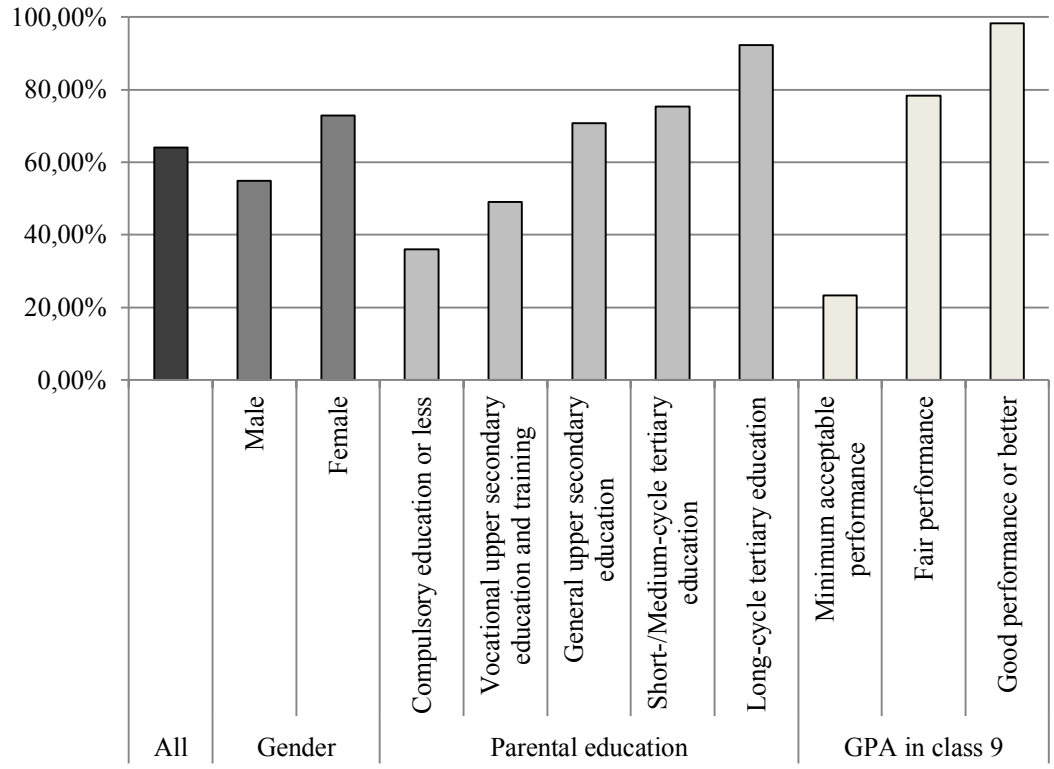
Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2016: p. 204).
Note: **p < 0.01. *p < 0.05. +p < 0.10.

Initial completion of the general instead of the vocational upper secondary track

Figure 2.4 addresses the second research objective by illustrating the results of the descriptive analyses in relation to the initial completion of a program within the track of general upper secondary education, instead of a program within the track of vocational upper secondary education and training. Of those individuals in my sample who finish

some kind of first upper secondary education soon after successful graduation from compulsory schooling, a total of approximately 64 percent complete a general upper secondary program[62]. Regarding gender-based disparities, it appears that, among females, the percentage directly accomplishing a general qualification is higher than among males (72.95 percent vs. 54.97 percent). Moreover, the figures reveal that the share of children initially completing a general upper secondary education increases with the parents' educational level, as well as with the GPA the students achieve in class 9. While around 36 percent of students with parents exhibiting no more than compulsory education as their highest educational attainment first complete a program within the general instead of the vocational track, this holds true for around 92 percent of students whose parents hold a long-cycle tertiary degree. At around 23 percent, only a small proportion of those students who achieved merely a minimum acceptable performance at the end of their compulsory education initially obtain a general upper secondary qualification. By comparison, for children with at least a good pre-tracking performance the share is 98.24 percent.

Figure 2.4: Initial completion of the general instead of the vocational upper secondary track (results as percentages; N = 74,774)



Source: Own calculations based on population register data maintained by Statistics Denmark.

[62] Further descriptive analyses show that the completion of an academically-oriented general upper secondary program is more popular than that of a vocationally-oriented general upper secondary program, whereby a closer look also reveals differences by gender (see Appendices C and D).

The results of the logistic regression models predicting initial completion of the general instead of the vocational upper secondary track are presented in Table 2.2. Again, and as already indicated by the descriptive findings, a clear pattern according to students' gender emerges. In all three models, the likelihood of women attaining a general upper secondary qualification is greater than that for their male counterparts[63]. In addition, social origin is of great significance (Model 2), and remains – in contrast to the analyses on non-completion of upper secondary education – a powerful predictor even after incorporating students' pre-tracking performance in Model 3. Children of parents with a general upper secondary education or some kind of tertiary degree have better chances of initially completing a program in the general upper secondary track than students whose parents accomplished a vocational upper secondary education and training program. Students with poorly educated parents (that is, compulsory education or less) are least likely to achieve some kind of general upper secondary qualification.

Table 2.2: Logistic regression models predicting initial completion of the general instead of the vocational upper secondary track (results as coefficients; N = 74,774)

	Model 1	Model 2	Model 3
Gender (ref. Male)	0.79**	0.96**	0.81**
Female			
Parental education (ref. Vocational upper secondary education and training)			
Compulsory education or less		-0.59**	-0.40**
General upper secondary education		0.99**	0.72**
Short-/Medium-cycle tertiary education		1.23**	0.97**
Long-cycle tertiary education		2.64**	2.10**
GPA in class 9 (ref. Fair performance)			
Good performance or better			2.42**
Minimum acceptable performance			-2.29**
Constant	0.20**	-0.54**	0.34**
Log likelihood	-47490.01	-42128.82	-32549.59

Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2015: p. 205).

Note: **p < 0.01. *p < 0.05. +p < 0.10.

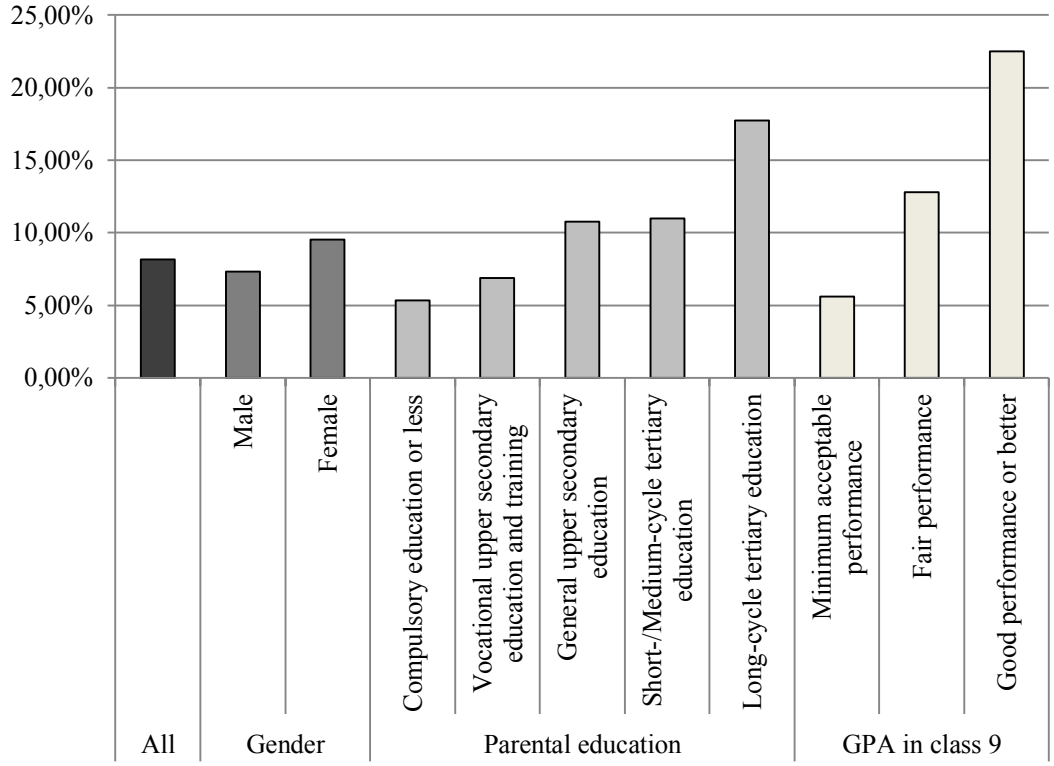
'Upgrading' in upper secondary education

In reference to the third research interest, Figure 2.5 depicts the descriptive findings with regard to the extent to which students who initially completed vocational upper secondary education and training upgrade their level of upper secondary education by accomplishing a general upper secondary education later on. In total, around 8 percent of those

[63] Also, further multivariate analyses show that women are more likely to initially complete an academically-oriented (as opposed to a vocationally-oriented) general upper secondary education than men (see Appendix E).

individuals who first finished a program within the vocational upper secondary track go on to upgrade by additionally attaining a general upper secondary qualification. As the figure implies, upgrading is more common among female than among male students (9.55 percent vs. 7.33 percent). With regard to students' social origin, it can be seen that more children of highly educated parents holding a long-cycle tertiary degree are upgrading their level of upper secondary education (17.75 percent). The percentage declines the lower the parents' level of education, amounting to only around 5 percent in case of students whose parents completed no more than compulsory education. Also, the share of upgraders is particularly high among those children who performed well (good performance or better) at the end of basic schooling.

Figure 2.5: Upgrading in upper secondary education (results as percentages; N = 26,835)



Source: Own calculations based on population register data maintained by Statistics Denmark.

Table 2.3 shows the multivariate results concerning upgrading in upper secondary education. Across all three models, and in line with the descriptive impressions, I find a female advantage, meaning that girls are significantly more likely to upgrade their level of upper secondary education than boys. As in the previous analyses, social origin (Model 2) plays an important role for children's educational chances within the stratified Danish post-compulsory school system. Compared to students whose parents completed at most a vocational upper secondary education and training program, children of parents with at

least a general upper secondary degree exhibit a significantly higher probability of completing a general upper secondary program after initial graduation from the vocational upper secondary track. In this case, too, there is a notable effect of social origin, even when accounting for children's GPA in class 9 (Model 3). Once more, students with the least educated parents have the worst chances of obtaining a general upper secondary qualification.

Table 2.3: Logistic regression models predicting upgrading in upper secondary education (results as coefficients; N = 26,835)

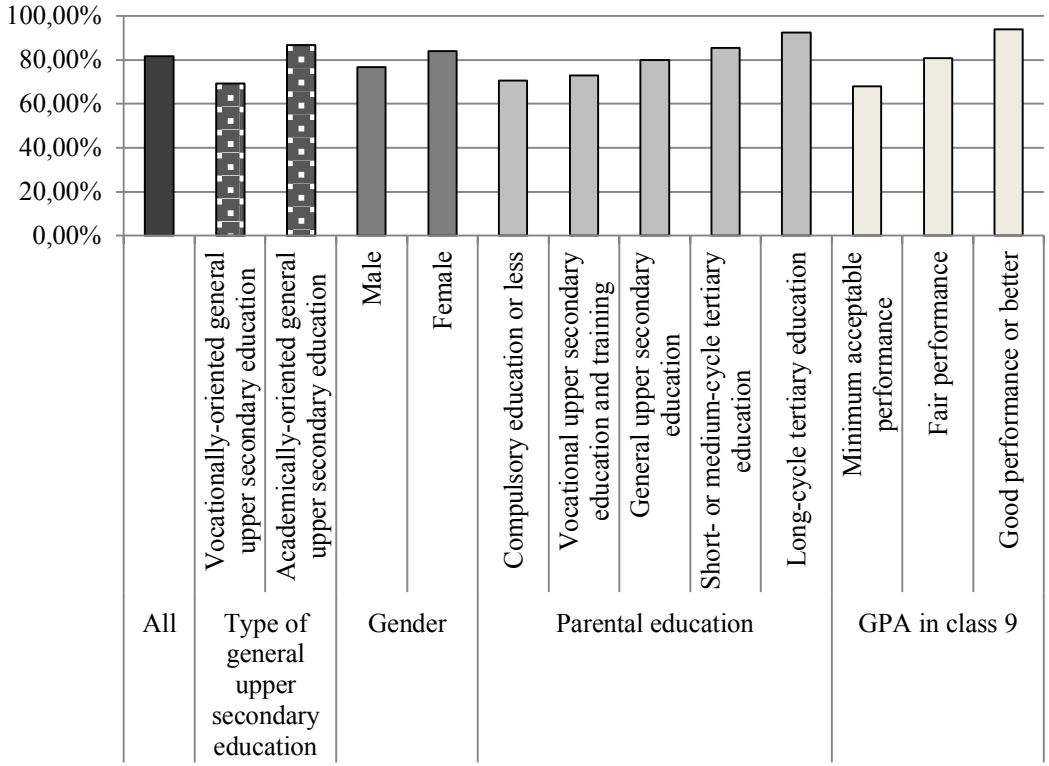
	Model 1	Model 2	Model 3
Gender (ref. Male)			
Female	0.29**	0.37**	0.33**
Parental education (ref. Vocational upper secondary education and training)			
Compulsory education or less		-0.29**	-0.23*
General upper secondary education		0.52**	0.44**
Short-/Medium-cycle tertiary education		0.55**	0.48**
Long-cycle tertiary education		1.13**	1.01**
GPA in class 9 (ref. Fair performance)			
Good performance or better			0.59**
Minimum acceptable performance			-0.84**
Constant	-2.54**	-2.77**	-2.27**
Log likelihood	-7577.21	-7459.50	-7280.07

Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2015: p. 207).
Note: **p < 0.01. *p < 0.05. +p < 0.10.

Enrollment in some kind of tertiary education

Figure 2.6 relates to the fourth research objective, presenting the descriptive findings in terms of students' enrollment in some kind of tertiary education, provided that a general upper secondary education has been achieved. Of those students who meet the necessary admission requirements, in total around 82 percent enrol in a tertiary education program within the observation period. Seemingly, this applies to a greater degree for students from more academically-oriented general upper secondary programs than for those who completed a more vocationally-oriented program of general upper secondary education. Broken down by gender, it appears that women are continuing their education at tertiary level to a somewhat larger extent than men (84.06 percent vs. 76.62 percent). Furthermore, it is worth noting that the percentage of students enrolling in tertiary education gradually increases the higher their parents' educational level and the better the students' pre-tracking performance. There is up to a 22 percentage point difference on the basis of parental education, and a 26 percentage point difference with respect to young individuals' GPA in the 9th class of compulsory primary and lower secondary education.

Figure 2.6: Enrollment in some kind of tertiary education (results as percentages; N = 50,126)



Source: Own calculations based on population register data maintained by Statistics Denmark.

The results of the equivalent logistic regression models predicting enrollment in some kind of tertiary education are set out in Table 2.4. In all three models, students who completed a more vocationally-oriented general upper secondary program are significantly less likely to enroll in a tertiary education when compared to those who graduated from a more academically-oriented program of the general upper secondary track. Moreover, it can be seen that, across all models, females show a markedly higher probability of progressing to the tertiary level than their male counterparts. Regarding the impact of social origin (Model 2), I find that children whose parents obtained at least a general upper secondary qualification clearly have a better chance of enrolling in tertiary education than children of parents who at most finished a vocational upper secondary education and training program. These results remain significant even after incorporating students' pre-tracking performance in the third model, where the substantial negative effect on enrollment in a program at tertiary level among children with the least-educated parents becomes weaker.

Table 2.4: Logistic regression models predicting enrollment in some kind of tertiary education (results as coefficients; N = 50,126)

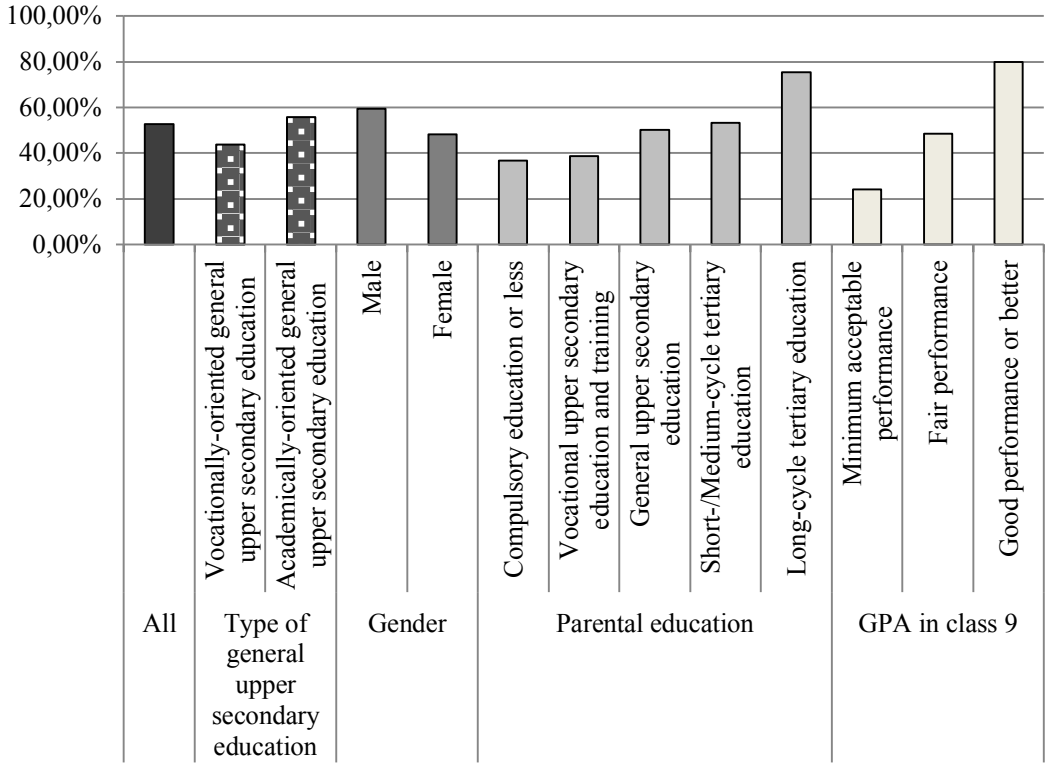
	Model 1	Model 2	Model 3
Type of general upper secondary education (ref. Academically-oriented general upper secondary education)			
Vocationally-oriented general upper secondary education	-1.04**	-0.81**	-0.71**
Gender (ref. Male)			
Female	0.20**	0.33**	0.29**
Parental education (ref. Vocational upper secondary education and training)			
Compulsory education or less		-0.16**	-0.11+
General upper secondary education		0.36**	0.28**
Short-/Medium-cycle tertiary education		0.67**	0.60**
Long-cycle tertiary education		1.29**	1.14**
GPA in class 9 (ref. Fair performance)			
Good performance or better			1.01**
Minimum acceptable performance			-0.52**
Constant	1.76**	1.18**	1.17**
Log likelihood	-22805.52	-22166.13	-21670.46

Source: Own calculations based on population register data maintained by Statistics Denmark.
Note: **p < 0.01. *p < 0.05. +p < 0.10.

Initial enrollment in university-level instead of non-university-level tertiary education

Addressing the fifth research objective, Figure 2.7 portrays the findings of the descriptive analyses on initial enrollment in tertiary education at the university level instead of the non-university level. In total, around 53 percent of those individuals in my sample who are eligible for tertiary education and wish to continue their studies directly enroll in a research-based program at the university level. As the figures reveal, this is more common among students holding an academically-oriented general upper secondary degree than among students who achieved a vocationally-oriented general upper secondary qualification (55.79 percent vs. 43.77 percent). Interestingly, when it comes to gender differences men seem to have the advantage this time: While around 60 percent of male students initially enroll in university-level tertiary education, this holds true for around 48 percent of female students. The results furthermore indicate that the lower the parents' educational attainment (with around a 39 percentage point difference) or the worse the GPA achieved at the end of basic schooling (with around a 56 percentage point difference), the smaller the share of students initially enrolling in a university-level tertiary education program.

Figure 2.7: Initial enrollment in university-level instead of non-university-level tertiary education (results as percentages; N = 40,972)



Source: Own calculations based on population register data maintained by Statistics Denmark.

Finally, in Table 2.5, the multivariate results referring to initial enrollment in a university-level instead of a non-university-level tertiary education program are displayed. As a first observation, it can be stated that, across all three models, graduates from more vocationally-oriented general upper secondary programs have substantially poorer chances of initially enrolling in a long-cycle university-level tertiary education than students who finished a more academically-oriented program within the general upper secondary track. Also in line with the descriptive findings, females consistently show a significantly lower probability of first enrolling in a tertiary education program at the university level than their male contemporaries. In this case, too, social origin is of clear relevance (Model 2) and does not lose its influence when, in the third model, students' GPA in class 9 is additionally taken into account: Compared to children of parents whose highest educational qualification attained is a vocational upper secondary and training degree, students of parents with at least a general upper secondary qualification benefit from a significantly greater likelihood of initially enrolling in university-level tertiary education. For children of parents with a very low level of education (that is compulsory education or less), no strong associations appear.

Table 2.5: Logistic regression models predicting initial enrollment in university-level instead of non-university-level tertiary education (results as coefficients; N = 40,972)

	Model 1	Model 2	Model 3
Type of general upper secondary education (ref. Academically-oriented general upper secondary education)			
Vocationally-oriented general upper secondary education	-0.60**	-0.35**	-0.16**
Gender (ref. Male)			
Female	-0.55**	-0.44**	-0.54**
Parental education (ref. Vocational upper secondary education and training)			
Compulsory education or less		-0.10	0.01
General upper secondary education		0.42**	0.30**
Short-/Medium-cycle tertiary education		0.52**	0.43**
Long-cycle tertiary education		1.44**	1.28**
GPA in class 9 (ref. Fair performance)			
Good performance or better			1.36**
Minimum acceptable performance			-1.05**
Constant	0.59**	-0.06*	-0.12*
Log likelihood	-27756.80	-26615.26	-24793.68

Source: Own calculations based on population register data maintained by Statistics Denmark.
Note: **p < 0.01. *p < 0.05. +p < 0.10.

2.1.7 Interim summary and discussion

Given the crucial role of education not only for society as a whole, but also in shaping individuals' lives, a country's overall level of education is just as important as its distribution among the citizens (Duryea et al. 2007). Since both gender and school stratification are important issues in education, the main aim of this subsection – after a brief excursus on Danish ECEC – was to explore the role of gender for children's pathways in tracked Danish post-compulsory education and training (Claire 2004). In order to also consider gender differences in educational achievement in the context of other individual-level characteristics, students' social origin (indicated by parental education) has been included as another explanatory variable (EURYDICE 2010).

All in all, the results of the empirical analyses have shown that – despite the favorable conditions of Denmark's institutional setting, which is highly committed to ensuring all male and female citizens equitable educational possibilities – "[…] equal access to education does not provide the equalising effect on outcomes that might be expected[64]" – both in terms of gender and social origin (Ballas et al. 2012: p. 62). Within the scope of

[64] Although I did not study the effect of educational differentiation itself, it is very likely that (besides individual-level determinants) the implementation of tracking at Danish post-compulsory upper secondary and tertiary level also plays a role in the emergence and maintenance of inequalities in educational outcomes.

the descriptive and multivariate investigations, two pivotal transition points within the Danish mainstream education and training system have been addressed: Firstly, the progression from non-tracked compulsory primary and lower secondary education to the vocational or the general upper secondary track, and secondly the move from general upper secondary education to a tertiary education at the non-university level or the university level. At the end of this subsection I would like to briefly summarize the key findings in response to the five research questions which have been under examination.

Bukodi et al. (2015: p. 7) note that "[…] the decision whether or not to carry on to upper secondary level is known to be a critical juncture in school careers". Since the completion of an upper secondary program is increasingly becoming a necessity for individuals in advanced, knowledge-based economies, young persons dropping out of the educational system after compulsory primary and lower secondary education can be considered to be particularly disadvantaged (Arneberg 2009). On a globalized labor market that increasingly demands higher levels of qualification, they will have difficulties both finding work and staying in employment (Allmendinger et al. 2011). Fortunately, in total, around 93 percent of the students in my sample finish some kind of upper secondary education soon after having successfully graduated from basic schooling. This result comes very close to the Danish government's declared objective to increase completion rates at upper secondary level to 95 percent by the year 2020 (Danish Agency for Universities and Internationalisation 2012). However, as has also become evident, male students (as well as students with a less advantageous social origin) face a higher risk of not accomplishing[65] any kind of upper secondary program, although the influence of gender and parental education diminishes once children's pre-tracking performance is taken into account. A problematic aspect in this context is certainly the frequently and indeed critically discussed high dropout rate from the vocational upper secondary track, especially among young men (OECD 2013; Jørgensen 2015).

Within Denmark's school system vocational upper secondary education and training is more or less a 'blind alley' on the way to tertiary education, and as a result, it is even more important to identify gender-specific differences concerning the initial completion of a general instead of a vocational upper secondary program (Jørgensen 2011). While in total around 64 percent of students first finish a general upper secondary education and 36 percent a vocational upper secondary education and training program, it appears that

[65] Since I only look at the first years after successful graduation from compulsory schooling, it is quite conceivable that more of the individuals in my sample will eventually go on to complete an upper secondary program.

women are more likely to directly attain a general upper secondary qualification than men. This is in line with the findings reported for other studies, which observe the drop in status of the – usually male-dominated – Danish vocational track (Rolls 2012; Jørgensen 2014). Furthermore, I was able to establish that social origin plays a significant role in this regard: Children of academically-educated parents (holding a general upper secondary degree or higher) clearly exhibit better chances of initially completing a program in the general upper secondary track.

Another notable result was that 'upgrading' at upper secondary level – that is, achieving a general upper secondary qualification after at first a vocational upper secondary education and training program has been completed – is rare in Denmark: Altogether, only around 8 percent of the young individuals in my study upgrade their level of upper secondary education, by this means opening the way to tertiary education. Following Jørgensen (2014: p. 27), this is a sign that "[...] the tracking of upper secondary education and the structure of the educational pathways diverts young people who complete a vocational education, from progressing to higher education. This is in accordance with the 'diversion effect' of a separate vocational track found in other research on young people's transition pathways". Again, I found marked gender disparities in favour of females, who are more likely to be among the upgraders than their male counterparts. The same applied to children whose parents (at least) reached a general upper secondary degree themselves, probably mirroring more privileged social groups' aversion to downward intergenerational social mobility (Ress and Azzolini 2014). At the same time – to quote Jørgensen (2014: p. 28) once more – the "[...] social and cultural background of the great majority of the vocational students makes it unlikely for them to opt for an academic education. In their family and social environment, higher education is unknown territory and investment in higher education has an uncertain outcome" (see Boudon's (1974) distinction between primary and secondary effects of social stratification[66]).

Since all kinds of general upper secondary programs prepare for studies at tertiary level, but do not give direct access to any specific job, it was also examined whether male and female students who completed a program of the general upper secondary track equally enrol in some kind of tertiary education. Within the observation window, in total around 83 percent of those students entitled to access tertiary education make use of this right and enter a program at the non-university level or the university level (the official goal of the Danish government for the year 2020 is to achieve a tertiary graduation rate of 60

[66] For a more profound discussion of the importance of primary and secondary effects on educational success in Denmark, see for example Holm and Jæger 2013.

percent) (OECD 2013). Besides the finding that students who graduated from more academically-oriented general upper secondary programs show a greater probability of entering tertiary education, this time, again, a distinct female advantage became apparent. This may partly be due to a 'performance effect': Women's performance in school tends to be better than men's, "[…] and performance gets increasingly important at the higher and more selective educational levels" (Ballarino et al. 2013: p. 19). Besides, it could be an 'occupational effect', since in typically female fields of employment (notably in the social service sector, see also subsection 2.2), increasingly, a higher educational degree is required (Ballarino et al. 2013). In addition to gender, students' social origin has proven to be strongly associated with progression to the tertiary level, with children of well-educated parents being in a significantly better position.

Not only within upper secondary education, but also at tertiary level, Denmark's mainstream education and training system displays a binary structure, which is why I finally analyzed whether there is a gender imbalance among those individuals who initially enrol in a tertiary education at the university level instead of the non-university level. Altogether, around 53 percent of those students eligible for tertiary education first enter a university-level (long-cycle) program and 47 percent a non-university-level (short- or medium-cycle) program. Moreover, it emerged that the completion of a more academically-oriented general upper secondary education is linked to an increased likelihood of directly enrolling in a tertiary program at the university level. In terms of gender differences, which in the course of the previous investigations had been in favor of women, male students were better represented, as their female counterparts demonstrated considerably decreased chances of participating in university-level tertiary education (a potential reason for this might be that some of the most feminized study fields – i.e., childcare worker or primary and secondary school teacher – are organized as medium-cycle programs). Ultimately, it turned out that the reverse is true for children of parents with a general upper secondary or some kind of tertiary degree.

After having examined the role of gender for children's educational careers within tracked Danish post-compulsory education and training, it will be interesting to see how disparities between men and women evolve across their further life course, more precisely at the time of their initial integration into the Danish labor market in young adulthood. This topic will be covered in the following, second empirical subsection of the present work.

2.2 YOUNG ADULTS' INITIAL INTEGRATION INTO THE DANISH LABOR MARKET AND GENDER PATTERNS IN ENTRANTS' EDUCATIONAL ACHIEVEMENTS AND FIRST JOB OUTCOMES

2.2.1 Preliminary remarks

Women's emancipation and the continuing prevalence of gender segregation in modern societies' labor markets

According to Estévez-Abe (2005: p. 180), the "[…] twentieth century was the century of women's emancipation. Today, all advanced industrial countries are formally committed to advancing gender parity in many aspects of social life". Consequently, from about the beginning of the 1960s to the present, gender gaps in, for example, political power, educational attainment, and labor force participation have shrunk considerably (Halldén 2011). While for much of the last century females' level of education was clearly below that of their male counterparts, women have caught up significantly during recent decades – in the meantime often even surpassing men's educational achievement (Buchmann 2015). Higher educational attainment rates among females have resulted in the fact that today, "[…] women are entering the labor force in greater numbers and are staying employed longer over their life course […]", which in turn contributes to their economic independence (OECD 2011b: p. 34).

Yet, despite these profound developments, men and women still have unequal outcomes on the labor market, indicating that greater educational equality is not necessarily a guarantee for equality in employment (OECD 2012a; Mills et al. 2014). The persistence of disparities in this respect becomes especially obvious in the continuing segregation of modern labor markets on the basis of gender, which means that males and females tend to work in different occupations and sectors (referred to as 'horizontal segregation'), as well as under varied employment conditions, e.g. concerning wages, degree of responsibility, or career opportunities (denoted as 'vertical segregation') (Blackburn et al. 2002; Busch 2011; Halldén 2011). Even though the nature and extent of segregation varies[67] from country to country, it is well established that gender-specific labor market structures are an important aspect of all contemporary societies – this applying in particular to the

[67] Among possible explanations for national variations with respect to gender-based labor market segregation, Blackburn et al. (2009: p. 1) cite "[…] the impact of national policies (Chang, 2000; Charles and Grusky, 2004), the role of motherhood (England, 2005), differential levels of the distribution of human capital by gender in a given society, the social construction of skill (Estevez-Abe, 2006), the structural characteristics of modern economies with large service sectors (Charles, 2000), and fertility rates (Charles, 2000)".

wealthy industrialized ones[68] (Blackburn et al. 2002; Blackburn 2009; Blackburn et al. 2009).

Because of this phenomenon's pervasiveness and its manifold – mostly negative – implications, gender-based labor market segregation is a frequent topic both in the scholarly literature and in political discussions, where desegregation has become a main goal (Dolado et al. 2002; Emerek et al. 2003; Bettio and Verashchagina 2009). In the academic debate, however, two different points of view have emerged. One standpoint considers gender segregation to be problematic[69] because it upholds discriminatory mechanisms by which the labor market is divided into 'male and female tasks', carried out under distinct working conditions (notably in terms of payment). The other standpoint doubts that gender-segregated labor markets only have disadvantages, and proposes the use of other measures (e.g. 'equal pay for equal work') than the combating of horizontal differences to remove the wage gap (and other vertical inequalities) between men and women. Gender segregation, for instance, exerts a positive influence on the creation of family-friendly workplaces, which are mostly found in female-dominated labor market segments (Emerek et al. 2003). Nevertheless, a consensus probably exists that 'different' does not automatically mean 'unequal', and that it is not segregation itself that matters, "[…] but rather the inequality that may be associated with it", (Bettio and Verashchagina 2009; Blackburn et al. 2009).

Even in Denmark's gender-friendly labor market, segregation is widespread

In the Danish tax-financed welfare state, the supply of labor is a major political issue, with the promotion of occupational participation for everybody as the government's overarching objective (Andersen 2008). Since all citizens are needed in the workforce, Denmark's labor market policy is designed to remove any kind of direct or indirect gender discrimination as well as any obstacle that could hinder men's and women's participation in employment (Andersen 2008; Ministry of Gender Equality of Denmark

[68] In the European Union as a whole, the level of labor market segregation according to gender remains on a consistently high level. With regard to, for example, occupational segregation, "[…] the degree of concentration in a limited number of occupations is much higher among women than among men. In 2005, almost 36 % of women in work in the Union were employed in just six of the 130 standard occupational categories (ISCO-88 three-digit) whereas the top six occupations for men accounted for just over 25 % of the total in work" (Bettio and Verashchagina 2009: p. 30).

[69] The academic literature mentions, among other things, the following micro and macro-level disadvantages of gender-based labor market segregation: It increases the gender pay gap, cements stereotypical perceptions of both genders' qualities and competences, restricts individuals' labor market options, fosters the waste of human resources, creates bottlenecks in the labor market, and limits the efficiency and flexibility of the labor market as a whole (Blackburn and Jarman 1997; Anker et al. 2003; Bettio and Verashchagina 2009; Bloksgaard 2011; Blossfeld et al. 2015).

2014). Hence, although the securing of equal rights and opportunities for males and females in all spheres of life is certainly a basic principle of the Danish institutional setting, it could be said that gender equality policy also constitutes an important means of achieving an efficient employment policy (Melkas and Anker 2003; United Nations 2009; Ministry of Gender Equality of Denmark 2014). There are a number of policies aimed at ensuring a high degree of gender-friendliness on Denmark's labor market, above all the 'Act on Equal Pay' and the 'Act on Equal Treatment' (Van der Lippe and van Dijk 2002; Wehner and Abrahamson 2003; Andersen 2008). The older of these, the Equal Pay Act, was introduced in 1976 and prohibits discrimination against male and female employees specifically with regard to payment (Ministry of Gender Equality of Denmark 2014). In force since 1978, the Equal Treatment Act[70] also states that men and women must in general not be treated differently on the labor market, e.g. in terms of hiring, working conditions, promotion, or dismissal (Wehner and Abrahamson 2003; Augustin 2011). Of course, the furtherance of individuals' – and particularly women's – equal participation in the labor force is also embedded in a broader set of institutional framework conditions, including e.g. access to affordable childcare services (described in point 2.1.2) and suitable parental leave schemes (European Commission 2015a).

The fact that this strategy bears fruit is evidenced by a considerable extent of labor market participation among the population, with the activity rate of females (both without and with children) being particularly noteworthy. However, for all that "[…] today Danish women participate in the labour market almost as much as men, they are working in other parts of the labour market, with other tasks and in other job functions. Thus, at the beginning of the new millennium, the Danish labour market is still highly gender-segregated" (Bloksgaard 2011: p. 6). How can it be that Denmark, otherwise admired for its efforts and success in achieving gender equality, actually demonstrates one of the highest levels of gender employment segregation within the European Union (Estévez-Abe 2005; Bloksgaard 2011)? As will be explained later, in point 2.2.2, the solution to understanding this puzzle lies in the decomposition of overall segregation into a horizontal and a vertical dimension (Charles 2003). When taking into account these different components of segregation, it becomes clear why gender "[…] egalitarianism does not accompany low segregation but just the opposite" (Blackburn et al. 2009: p. 9).

[70] Since 1998, the 'Act on Equal Treatment of Women and Men in the Occupational Social Security Schemes' additionally stipulates "[…] that contributions as well as benefits in the labor market pension schemes should be equal for men and women" (Wehner and Abrahamson 2003: p. 51).

Guiding question and concrete research objectives of the second empirical subsection

As reported above, notwithstanding major changes in women's educational achievements and their engagement in paid work from the second half of the twentieth century, gender segregation on advanced industrial countries' labor markets continues to exist (Estévez-Abe 2005; Halldén 2011). Also Denmark, a state known for its long-standing dedication towards establishing gender equality in all areas of society, does not constitute an exception in this regard. However, despite this being an object of intensive research, a limitation of most previous studies dealing with gender employment segregation is that they refer to the labor force as a whole, so that "[…] up to now, little is known about whether or not and, indeed, how far gender differences are already determined at the time of labor market entry" (Blossfeld et al. 2015: p. xix).

Investigating labor market participants in their entirety means looking at individuals who contribute to the workforce at very distinct stages of their life course, therefore having quite heterogeneous biographies both as regards their employment careers and family responsibilities (Blossfeld et al. 2015). By instead focusing on the group of entrants to the labor market – or more precisely on gender patterns in first job outcomes – and by examining the early phase of individuals' personal and professional biography, the level of educational attainment should be a strong predictor of young adults' labor market chances, and the prime resource when competing for work (Grunow and Leth-Sørensen 2004; Blossfeld et al. 2015). In addition, because "[…] women have become, on average, better educated than men in recent cohorts, the first significant job is a key attainment with which to examine whether gender differences exist already or whether they are not yet visible at this stage" (Blossfeld et al. 2015: p. 5). When viewed over the longer term, it is furthermore possible to assess "[…] the degree to which women have seen occupational and economic returns to their rising educational attainment relative to men", although it should be distinguished between gains on the horizontal and the vertical level (Buchmann 2015: p. xvi). Therefore, the core question guiding the analyses within the second empirical subsection of this doctoral thesis is: *Are there gender patterns in young adults' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market?*

By drawing on longitudinal data from Danish administrative registers kept by Statistics Denmark, utilizing descriptive and multivariate methods, this comprises inquiries into three concrete research objectives: First, to investigate gender disparities in educational achievement levels of young career starters, and how they have developed over time;

second, analysing the markedness of horizontal gender differences in the first significant job, and how these have changed across birth cohorts; third, to examine the extent to which gender-based vertical inequalities occur at initial entry into work, to what extent they are influenced by educational as well as horizontal asymmetries, and how these have evolved over the course of time.

Overview of the subsequent procedure

This subsection proceeds as follows: Since the structure of the economy plays an important role in determining individuals' school-to-work transitions, as well as their chances on the job market, the reader is first given theoretical background information about the main features of the Danish labor market (2.2.2). Subsequently, and still from a theoretical perspective, transition processes from initial education to working life in Denmark are considered (2.2.3). By taking into account findings from other studies, here I elaborate on the country's 'youth transition regime', influencing the ability of Danish entrants to start their professional careers (Thompson 2013). After that I describe my research objectives and the methodology applied (2.2.4). The results of the empirical analyses are set out in point 2.2.5. Lastly, I provide an interim summary and discussion of gender patterns in young adults' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market (2.2.6).

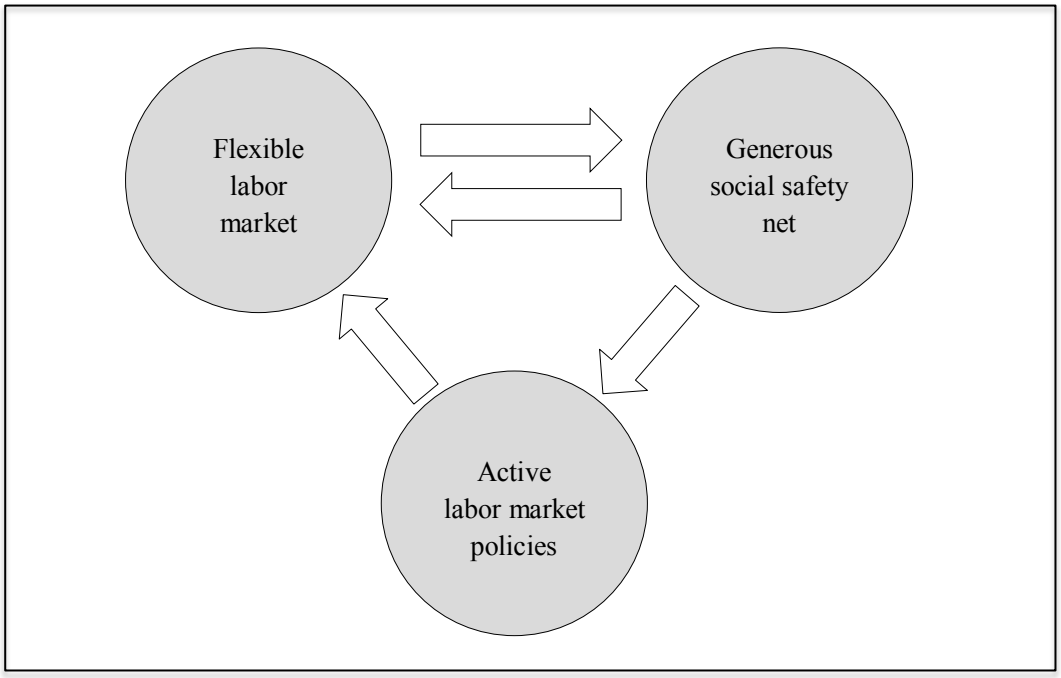
2.2.2 Features of the Danish labor market

Denmark's labor market model – the 'golden triangle' of flexicurity

A first important characteristic of the Danish labor market is that it rests on a model consisting of three pillars, namely high flexibility, generous social security benefits, and active labor market measures. Together, these elements form the so-called 'golden triangle' of flexicurity, as illustrated in Figure 2.8 (Ebralidze and Leth-Sørensen 2008; Hofäcker 2010). 'Flexicurity', describable as a condition or also as a strategy, is a hybrid of the English words flexibility and security (Confederation of Danish Employers 2007). Before the reforms during the 1990s (explained later), Denmark's labor market rested on a – rather badly performing – pure flexicurity model (consisting of the two elements flexibility and security). It is only since the model was balanced with active labor market policies as a third element that it has begun to function better (Andersen and Svarer 2007). The diagram's arrows "[…] indicate flows of persons between different positions within work, welfare and active labor market programs" (Madsen 2002: p. 3). Flexibility and social safety constitute the main axis of the model, where the two arrows between

them stand for the number of workers who are affected by unemployment each year and from whom the majority, however, finds their own way back into employment soon. Individuals who do not quickly return to work are assisted by active labor market measures, which help them to get a new job (Madsen 2002; Obadić 2009). In the following section, the three corners of the Danish 'golden triangle' will be explained in more detail.

Figure 2.8: The Danish 'golden triangle' of flexicurity



Source: Own illustration based on Madsen (2002: p. 3)

The first element of the tripartite model is a flexible labor market where it is easy for employers to hire and fire[71] workers because of low levels of employment protection legislation[72] (Obadić 2009). The rationale behind this is to ensure that companies can adjust their labor input according to cyclical changes in production and sales without

[71] Andersen and Svarer (2006: p. 3) note that Denmark has a long tradition of flexible hiring and firing rules: "Since the end of the 1980s, the only change to the Danish employment protection rules has been in relation to temporary agency regulations. Thus, more employment categories have been allowed to use temporary employment contracts."

[72] Despite workers' low level of protection against dismissals, Denmark can be designated as a coordinated market economy whose main regulatory mechanism is the agreements between trade unions and employers (more important than legislation and government interventions) (Eriksson and Westergaard-Nielsen 2009; Obadić 2009). It is a Danish trait that the labor market is highly organized; "[…] many employees belong to trade unions and many businesses are part of employer confederations" (Danish Chamber of Commerce and Oxford Research 2010: p. 18). Around 85 percent of workers are covered by collective agreements which "[…] include regulations governing wages, pensions, working time, redundancies and various pay arrangements for employees during periods of illness, maternity/paternity leave etc." (Jensen and Larsen 2005: p. 3).

great costs (Andersen and Svarer 2006). As pointed out by the Confederation of Danish Employers (2007: p. 4), this means that "[…] firms need not be hesitant about expanding their workforce when business is going well. If it is very difficult to reduce staff, firms will think twice about expanding their workforce should the opportunity present itself". In consequence of the flexible dismissal rules Denmark's labor market is quite dynamic, as shown by the high degree of worker turnover and job turnover (Confederation of Danish Employers 2007). On average, around 30 percent[73] of all employees change to another firm each year (Madsen 2002). This appears to fit well to the predominance[74] of small and medium-sized enterprises (100 employees or less) in the Danish industrial landscape, implying that internal labor market structures are less important which, as a result of lower entry barriers, makes it easier to move from one company to another[75] (Madsen 2002; Hofäcker 2010). Additionally, Denmark can be classified as an occupational labor market system since mainstream education and training (see the description in point 2.1.3) are oriented toward providing skills that meet the demand of the job market. Curricula and standardized leaving certificates are defined in collaboration between labor market actors and the state, forming another important basis for the high degree of inter-firm mobility (Ebralidze and Leth-Sørensen 2008; Wahler et al. 2015). Yet, job changes may of course also involve spells of unemployment[76]; hence there is also a high flow of workers in and out of employment[77], with a great amount of short-term[78] unemployment (Andersen and Svarer 2006; Abrahamson 2009). Another way to highlight occupational

[73] This corresponds to around 700,000 employees (Confederation of Danish Employers 2007).
[74] In Denmark, "[…] only a handful of enterprises employ more than 5.000 workers. More than 25 per cent of the workforce are employed in enterprises with less than 50 workers" (OECD 1998: p. 6, 7).
[75] Also, when changing jobs wage earners do not lose entitlements to a pension, to earned holiday time, and so forth (Confederation of Danish Employers 2007).
[76] Ibsen and Westergaard-Nielsen (2005: p. 28) state that more "[…] than two thirds of all workers who leave an employer each year will have found a new job before next year and less than one third ends up in no employment the next year. A little more than half of these become unemployed while the rest is either retiring, in education or out of the labor force due to sickness or another reason".
[77] However, flexibility in employment is not necessarily associated with a sense of insecurity among wage earners (Confederation of Danish Employers 2007). Based on data from the 1989 and 1997 waves of the International Social Survey Programme, an analysis of the OECD Employment Outlook (2003) shows that Danish workers actually feel more secure in their jobs than employees in other EU countries: "The country with the highest share of employees worrying about losing their jobs was Spain with about 60%, followed by Portugal (50%) and Germany (43%), whereas in countries such as the US (17%), Canada (16%), Denmark (14%), the Netherlands (13%) and Norway (11%), workers seemed to be much less concerned. […] Especially with regard to Denmark, it seems that the average 'mobility rates' are high, whereas general perceptions of job insecurity are low. These low perceptions of job insecurity may be fostered by the 'Danish model', which offers a combination of low employment protection, high social protection and extensive labour market policies" (CEPS-ECHR 2004: p. 6).
[78] I.e. unemployment for a period of less than 3 months (Hofäcker 2010).

mobility on the Danish labor market is to look at job tenure. With seven and a half to eight years Denmark (together with the UK and Ireland) displays the lowest average tenure of employees throughout the European Union[79] (CEPS-ECHR 2004). Moreover, this reflects the considerable extent of annual job turnover (job creation and job destruction) taking place in the economy, amounting around 10 percent (Andersen and Svarer 2007; Abrahamson 2009). Despite the foregoing, "[…] the Danish system does not cause 'excessive' employment volatility. One reason for this may be that even though the legal rules are lax, explicit or implicit arrangements arise between employers and employees both to protect firm-specific human capital and to diversify risk" (Andersen and Svarer 2007: p. 395). Thus, although mobility is high, there is also a substantial share of workers in long-term employment relationships (Eriksson and Westergaard-Nielsen 2009). Besides, because of the circumstance that the majority of the workforce is easy to dismiss, most 'atypical'[80] work forms (part-time employment, fixed-term contracts, and self-employment) are of relatively minor importance and have remained at roughly the same level since the mid-1990s (Bredgaard et al. 2009; Hofäcker 2010). There is still another aspect to be noted, namely that the "[…] dynamic on the Danish market makes it easier for the individual to find just the job that best fits his or her qualifications" (Confederation of Danish Employers 2007: p. 5). At the same time, however, there is a "[…] constant 'productivity testing' of employees by employers" (Hofäcker 2010: p. 7).

In order to strike "[…] a balance between the flexibility needed for firms in adjusting their labour input and the quest for security for workers […]", the second element of the 'golden triangle' is a comprehensive and rather generous social security system (Andersen and Svarer 2007: p. 390). Hence, through the provision of a well-developed safety net citizens' economic security in case of loss of employment is assured, thereby compensating for the labor market risks workers in Denmark face (Madsen 2002; Grunow and Leth-Sørensen 2004). Around 80 percent of the workforce chooses to become voluntary members of the Danish unemployment insurance system[81], which is predominantly financed by taxes[82] (CEPS-ECHR 2004; Hofäcker 2010). Membership requires the candidate to have had a job for at least one year (Eriksson and Westergaard-

[79] For the EU as a whole, the average job tenure amounts to 10.6 years (CEPS-ECHR 2004).
[80] As defined by Bredgaard et al. (2009: p. 8) "[…] the concept "atypical employment" is a very broad label for the different forms of employment that are not consistent with the typical concept of 'normal', 'regular' or 'standard work', which is understood as a full-time contract on a permanent basis with a single employer".
[81] There are more than 30 different occupational unemployment insurance funds (Eriksson and Westergaard-Nielsen 2009).
[82] Workers pay a relatively small membership fee, and also the employers' contributions are very limited (CEPS-ECHR 2004).

Nielsen 2009). Insured unemployed persons are entitled to receive income compensation from the first day of joblessness for up to four years[83] within a six-year period (Abrahamson 2009; Hofäcker 2010). Among the eligibility conditions for insurance payments is that the individual is registered with the local job center, has been a member of an unemployment insurance scheme for a minimum of one year, and that he or she has been in full employment for not less than 52 weeks of the preceding three years. Moreover, unemployment may not be of the person's own making; entitlements are also dependent upon obligations to take part in job training and educational activities (the 'active part' of the triangle) (Confederation of Danish Employers 2007; Abrahamson 2009). The maximum replacement ratio of the previous salary stands at 90 percent, with a ceiling on compensation of around 1.800 Euro per month (Madsen 2002). Consequently, for low income groups the replacement rate[84] is high, but not for higher-income earners (Andersen and Svarer 2007; Eriksson and Westergaard-Nielsen 2009). Nevertheless, the Danish system of unemployment insurance is generous in international comparison[85] (Abrahamson 2009; Hofäcker 2010). Jobless persons who are not eligible for unemployment insurance benefits are covered by social assistance schemes (CEPS-ECHR 2004; Maibom et al. 2014).

Since only placing a social safety net under those who fall out of employment does not do enough to ensure the welfare states' effectiveness, the third crucial element of the 'Danish model' in its present form is active labor market policies. The need for a more active focus on job search and employment was recognized in the early 1990s, at a time when little was done to foster participation in or re-entry into the labor market, and the resulting high level of structural unemployment had led to an explosion of the costs of the welfare state[86] (Cox 1998; Andersen and Svarer 2007). As a necessary response, a series of labor market reforms came into force in 1994 with the aim of strengthening the incentives to seek and accept jobs (Andersen and Svarer 2006; Madsen 2002). These policy changes mainly comprised new restrictions on eligibility for unemployment benefits and their duration, as well as the implementation of activation measures both into the unemployment insurance system and social assistance in general (Andersen and Svarer

[83] Unlike in many other European countries, during this period payments are not reduced (CEPS-ECHR 2004).
[84] On average, the amount is around 60 percent of the prior income (Andersen and Svarer 2006).
[85] To give a few examples: In Finland the maximum period for obtaining unemployment benefits is 23 months, and in Sweden it is ten (Confederation of Danish Employers 2007).
[86] Unemployment started to increase in 1975, reaching a previously unseen peak level of 12 percent at the beginning of the 1990s. During the same period, the proportion of the age group 15-66 receiving public transfers rose to 30 percent (Cox 1998; Grunow and Leth-Sørensen 2004; Andersen and Svarer 2007; Hofäcker 2010).

2007). The latter mark the beginning of a new way of thinking regarding the balance between rights and duties, namely that the unemployed, on the one hand, have the right to receive income support and help to improve job prospects, but, on the other hand, in return also have the duty to actively look for new jobs and be willing to work (Andersen and Svarer 2007). Hence, after a certain period of unemployment (three months for young persons under the age of 30 and 12 months for those aged 30 or older), benefits begin to be supplemented by active re-integration measures[87] in the form of further job training, education, or other[88] publicly-funded[89] obligatory activities that serve to improve employability and the motivation[90] of the claimant to search for jobs (Madsen 2002; European Union 2010; Hofäcker 2010; Jørgensen 2011). With this significant shift in labor market policy from a passive to an active focus – or from 'welfare' to 'workfare' – unemployment declined sharply, from 12 percent in 1993 to 5.5 percent in 1999 (the lowest level since 1976), while the employment rate increased to 76.5 percent (Madsen 2002; Wehner and Abrahamson 2003; Grunow and Leth-Sørensen 2004; Andersen and Svarer 2007). This remarkable recovery of Denmark's economy is often referred to as the Danish 'employment miracle'. Researchers stress, however, that the strong reduction in unemployment is not exclusively attributable to an explicit labor market policy strategy, but also to the economic upswing and changes in leave schemes (for instance regarding early retirement or parental leave schemes) occurring in this period (Madsen 2002; Wehner and Abrahamson 2003; Hofäcker 2010). Also, during the 1990s, it was mainly the public sector that provided work opportunities for the unemployed (Grunow and Leth-Sørensen 2004).

In a time where many European countries are struggling with persistently high unemployment, the Danish labor market model arouses international interest. With its 'golden triangle', Denmark seems to have created an effective, functioning strategy that not only gives "[…] flexibility to businesses and income security to wage earners", but also brings unemployment down (Madsen 2002; Confederation of Danish Employers

[87] "At any given time two to four percent of the Danish labor force was in activation from 1995 to 2004" (Abrahamson 2009: p. 277).
[88] Job training and education constitute, however, the main activation measures, being applied for up to three years. During this time the unemployed person must contact the Employment Services at intervals of three months (CEPS-ECHR 2004).
[89] Annual spending on activation programs is approximately 1.5 percent of GDP (Andersen and Svarer 2006).
[90] Therefore, activation fulfils not only a qualificational, but also a motivational purpose (Madsen 2002). Studies evaluating the effects of activation measures discovered that there is indeed a substantial 'motivation effect' (sometimes also called 'threat effect'): Unemployed individuals intensify their employment seeking activities when they approach the time of activation (Andersen and Svarer 2006; Abrahamson 2009).

2007: p. 11). Yet despite its indisputable success, the 'Danish model' is also facing a number of challenges. These include, for example, the fact that the generous social security system can act as a disincentive to getting a job, especially if claimants do not gain financially from working. A further consequence of the rather high income transfers is that low-paid jobs are disappearing from the Danish labor market, while those still existing are quite difficult to fill. Moreover, it is of course expensive to pay benefits and to apply the broad range of active labor market measures, which makes the system costly and exerts pressure on public spending (Andersen and Svarer 2006; Confederation of Danish Employers 2007). Finally, a larger number of persons of working age (16-64) are still not employed, living on public support outside the labor market – "[…] they are marginalized from main stream society" (Abrahamson 2009: p. 296). Alongside these factors, one should also bear in mind that Denmark's labor market model has been developed over a long period of time, and cannot easily be transferred to other countries with different cultural as well as institutional conditions (CEPS-ECHR 2004).

Danish men's and women's participation in the labor market

Previously (see also subsection 1.3) it has been argued that Denmark represents an extended, tax-financed welfare state with a fine-mesh social safety net and a high degree of public service provisions. This presupposes that all who are able must be in work, or in other words, the Danish welfare model is 'employment-focused', placing great emphasis on achieving maximum labor force participation rates among both men and women (Andersen and Svarer 2007; Confederation of Danish Employers 2007). As stated by Andersen and Svarer (2007: p. 393), the "[…] reason is simple; when losing their jobs, most people have an entitlement to some income support, and at the same time, their tax payments are lowered". Besides, the state's promotion of a dual breadwinner model also results from its general orientation toward fostering gender equality via individuals' economic independence[91] (Andersen 2008; Hofäcker 2010). Against this background, it is no surprise that Denmark's labor market is furthermore characterized by an exceptionally high overall level of participation (CEDEFOP 2012). Even though the country was relatively hard hit[92] by the global economic crisis which erupted in 2008, with an

[91] With the aim of strengthening work incentives for both genders, in Denmark married couples are taxed separately on their income (Grunow and Leth-Sørensen 2004).
[92] Between 2007 and 2013 the general employment rate in Denmark dropped by 4.4 percentage points (OECD 2014).

employment-to-population-rate of more than 70 percent[93] it is still in a very good position when compared to other member states of the European Union (CEDEFOP 2012; OECD 2014). The general unemployment level – which prior to the crisis was at a record low [94] – meanwhile increased[95] to values above 5 percent[96], but continues to remain well beneath the European average of around 10 percent (European Union 2010; Hofäcker 2010; Andersen 2011).

The fact that Denmark reaches a total rate of employment that exceeds the joint EU objective of 70 percent is also due to the notable engagement of women in the labor market (Abrahamson 2009). Female participation started to grow rapidly in the 1960s "[…] in close connection to the growth of the public sector and the creation of the welfare state" (Eriksson and Westergaard-Nielsen 2009: p. 102; Olsen 2009). Yearly statistics not only reveal that, from 1980 onward, the employment rate for both genders is constantly high, but also that the difference between men's (76.5 percent) and women's (72.4 percent) overall activity rate fell to 4.1 percentage points in 2010, "[…] resulting in one of the smallest gender employment gaps across Europe" (Olsen 2009; Hofäcker 2010: p. 17; CEDEFOP 2012). Concerning joblessness, the general trend is that male and female unemployment figures show roughly the same pattern, whilst usually slightly more women than men are registered as unemployed[97] (Andersen 2008). Moreover, it should be stressed that with 48 percent[98] women nowadays constitute nearly half of the Danish workforce (Andersen 2008; Danish Agency for Universities and Internationalisation 2012). The large majority of them are employed on a full-time or part-time[99] basis, with a comparatively high number of working hours (Hofäcker 2010). Although part-time work

[93] "Of the total [Danish, author's note] population of approximately 5.6 million, the labor force in the second quarter of 2011 constituted approximately 2.7 million persons (1.4 million men and 1.3 million women) representing an employment rate of 70.9 percent […]" (CEDEFOP 2012: p. 10).
[94] Before the outbreak of the crisis in 2008 the overall level of unemployment in Denmark stood at 2.8 percent; this was the lowest value for 34 years (CEDEFOP 2012). Under the influence of the economic downturn, unemployment went up by around 3-4 percentage points, albeit, as has been said, from a very low starting point (Abrahamson 2009; Andersen 2011). Since the effects of the crisis with regard to job loss have been particularly pronounced in the traditionally male-dominated industrial and construction sectors, in 2009 the male unemployment rate exceeded that of females for the first time since 1976 (CEDEFOP 2012).
[95] Especially males, young people, and the low-skilled were affected by rising unemployment (European Union 2010; Andersen 2011).
[96] In 2011, for example, the general unemployment level was 7.3 percent (CEDEFOP 2012). Short-term unemployment makes up almost two thirds of total unemployment (Hofäcker 2010).
[97] The European Commission (2013: p. 5) reports that in Denmark, both "[…] the female and male unemployment rate are well below the EU-27 average (10.6 % and 10.5 % respectively)".
[98] "Labour force (16 – 64 years): 2,650,000; 52% men, 48% women (2009)" (Danish Agency for Universities and Internationalisation 2012: p. 2).
[99] Denmark has in general a relatively high share of part-time workers (24 percent in 2006), where eight out of ten part-time employees have chosen themselves to work less than full-time (Wehner and Abrahamson 2003; Bredgaard et al. 2009).

is more prevalent among women, the percentage of female part-time employment has significantly declined[100] over the last decades, indicating that men and women have also become more similar with respect to working hours. Besides, it must be taken into account that, in the Danish context, part-time work is not considered as an 'atypical'[101] form of work and can involve as much as 30 hours a week, which is close to full-time employment (37 hours per week) (Wehner and Abrahamson 2003; Bredgaard et al. 2009; Hofäcker 2010). An important precondition for the impressive activity level among women (notably mothers[102]) is the state's extensive provision of subsidized care for children[103] of all ages (see the excursus in point 2.1.2), summed up very well by Hofäcker (2010: p. 13): "As the support of individual employment through public care facilities makes up the basis for the high employment of both sexes required to finance the generous Danish welfare state and also provides good opportunities for both men and women to participate in further education and training measures, Hansen (2007) thus has proposed to extend the term flexicurity to 'flexicarity', highlighting this valuable contribution".

Denmark's gender segregated labor market – a paradox?

In addition to being based on the 'golden triangle' of flexicurity and showing high participation figures of both men and women, a further decisive feature of the Danish labor market, one which has already been briefly touched upon in point 2.2.1, is its pronounced segregation by gender. Before discussing this issue in greater detail, I would first like to briefly consider the phenomenon of gender-based labor market segregation in a more general sense. With this in mind I start by explaining the different components of segregation, as well as the main underlying causes that have been identified by decades of research (Bettio and Verashchagina 2009).

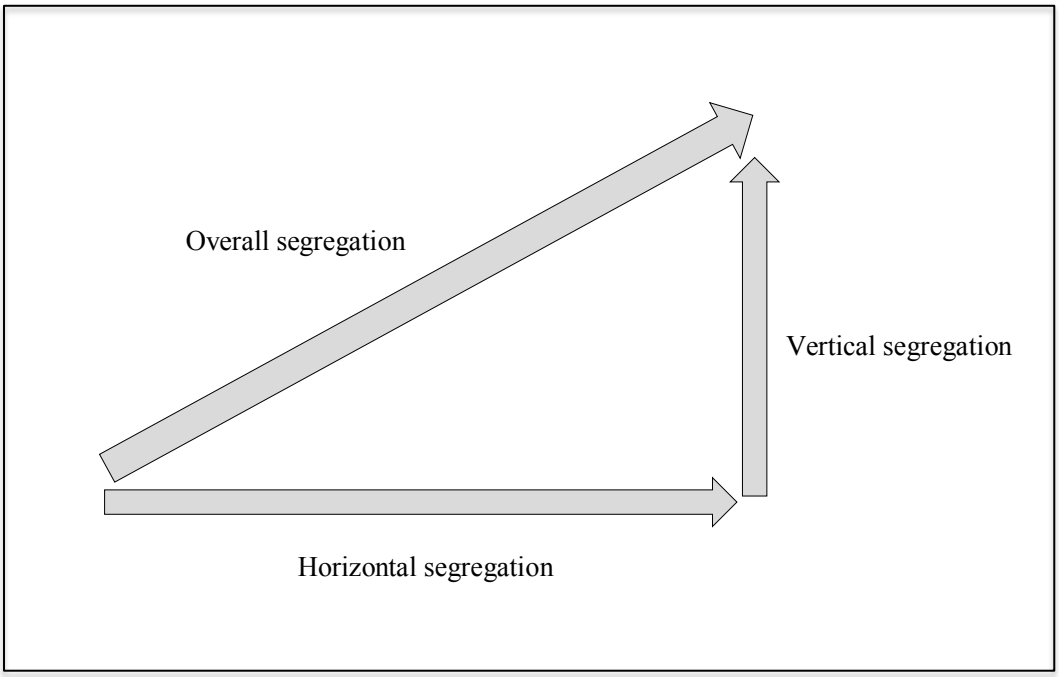
[100] Female part-time employment decreased from 37.3 percent in 1983 to 15 percent in 2009 (Hofäcker 2010). Most women state that they do not want to work full-time (e.g. for a better work-life balance) and can hence be considered as 'voluntary part-timers' (Wehner and Abrahamson 2003; Bredgaard et al. 2009).

[101] In terms of 'atypical' employment it may be stated that, in Denmark, women are self-employed to a lesser extent than men, and more likely to be in fixed-term contracts (Bredgaard et al. 2009).

[102] "Between 1974 and 1991 the labor market participation rate for women with small children rose from 48 percent to 90 percent (Christoffersen 1993). In the same period the share of women with small children who said that they were 'housewives' dropped from 43 percent to 3 percent" (Grunow and Leth-Sørensen 2004: p. 4).

[103] The state also offers care services for the elderly (Grunow and Leth-Sørensen 2004).

Figure 2.9: The components of segregation



Source: Illustration taken from Blackburn et al. 2002: p. 514

In the words of Blackburn et al. (2009: p. 1), gender segregation in the labor market, which is a persistent characteristic of many industrialized countries, "[…] may be seen as having two component dimensions, a vertical dimension measuring inequality and an orthogonal horizontal dimension measuring difference without inequality. The resultant of these two dimensions is segregation as generally understood, which is also known as 'overall segregation' to distinguish it from vertical segregation and horizontal segregation". As portrayed in Figure 2.9, this relationship[104] can be visualized in the form of a right-angled triangle, where the hypotenuse indicates overall segregation and the other two sides stand for the vertical and the horizontal component of segregation (Blackburn and Jarman 1997). The latter, i.e. horizontal segregation, denotes the uneven distribution of males and females across occupations and sectors (Busch 2011). Labor markets show a strong tendency towards being "[…] divided into 'jobs for women' and 'jobs for men' – that certain professions are particularly dominated by and associated with one sex – for example fireman, craftsman ('male jobs') or midwife, nurse ('female jobs'). These jobs are also called 'one-gendered' jobs" (Bloksgaard 2011: p. 6). Additionally, in nearly all countries there is an overrepresentation of females in the

[104] Blackburn et al. (2009: p. 6) point out that "[…] there is an inverse relation such that high overall segregation tends to have a relatively low vertical component, while the horizontal component is high. Correspondingly, high vertical segregation tends to accompany low horizontal segregation and relatively low overall segregation".

(public) service sector and an overrepresentation of males in the (private) industrial sector (Van der Lippe and van Dijk 2002). Vertical segregation addresses hierarchical inequalities between men and women in terms of job rewards and positions, thus pertaining to "[…] 'desirable' attributes […]" such as earnings or responsibility[105] (Charles 2003; Bettio and Verashchagina 2009: p. 7; Blossfeld et al. 2015). In this regard, throughout the world a fairly common pattern emerges, namely that women earn less than men (called the 'gender wage gap'[106]), and are less likely to hold managerial positions with a high level of decision-making (Van der Lippe and van Dijk 2002; Anker et al. 2003; Blossfeld et al. 2015). The fact that, for instance, occupations with a high female proportion exhibit lower wages[107] than occupations with a high male proportion shows that "[…] vertical gender segregation is often integrated in the horizontal gender segregation[108]" (Bloksgaard 2011: p. 6; Albæk and Thomsen 2013).

Today scientists largely agree that there is no single-factor explanation for gender segregation in the labor market, but that it is the result of a multidimensional process in which a set of interrelated variables is involved (Emerek et al. 2003; Bettio and Verashchagina 2009). For reasons of simplification a distinction is often made between causes on the individual and the institutional level, with the former again subdivided into supply-side and demand-side factors (Halldén 2011). On the level of the individual, supply-side sources include – most importantly – gendered educational[109] (and occupational) choices, in which socialization as well as stereotypical perceptions are likely to play a key role (Anker et al. 2003; Bettio and Verashchagina 2009; Halldén 2011). Even though in many countries women's educational attainment has already surpassed that of their male counterparts, there is a continuing tendency for healthcare and pedagogical courses, for example, to be dominated by women, while men are concentrated in the study fields of technical science and mathematics (Smyth 2002;

[105] All manifestations of vertical inequality are related and can be seen as indicators of social advantages (running from low to high) (Blackburn and Jarman 1997).
[106] Pedersen and Deding (2002) find that there are three main sets of explanations with respect to pay differentials between men and women: Disparities in productivity, asymmetries in their position on the labor market as regards wage levels (referring to the horizontal dimension of segregation), and discriminatory behavior on the part of the employer.
[107] As the main reasons for this, Blossfeld et al. (2015) mention the devaluation of female work, overcrowding, and skill specificity.
[108] Moreover, Blackburn and Jarman (1997: p. 4) note the following: Although all occupations are located at the same level along a single horizontal dimension which does not give advantage to either gender, professions (such as company directors and childminders) "[…] may, of course, be at different vertical levels, just as the vertical dimension measures occupations independently of their different horizontal positions".
[109] Nevertheless, among males and females who finished the same kind of educational course pronounced gender differences in labor market outcomes also appear (Smyth 2002).

United Nations 2009; Halldén 2011). As observed by Smyth (2002: p. 25), gender segregation in the labor market thus "[…] reflects, at least in part, the way in which the different kinds of courses taken by young women and men channel[110] them into gender-typed occupations". The demand-side forces especially include, among other things, gender discriminatory practices in employers' decisions concerning recruitment, provision of training[111], or pay level (Anker et al. 2003; Halldén 2011).

At the institutional level, welfare regimes' policies with respect to maternal employment or the supply of care for children and elderly people may affect gender-based labor market segregation (Halldén 2011). Also of importance is the structure of the labor market, notably the extent of women's labor force participation, the size of the service sector and the public sector, as well as the strictness of employment protection legislation (Halldén 2011; Blossfeld et al. 2015). Females' generally increased engagement in paid work on the one hand helps them better compete in the labor market because of their greater bargaining power (leading to lower vertical segregation), but on the other hand it is also accompanied by a larger share of women[112] who are "[…] more likely to enter typically female occupations […]" and with a lower probability of adopting higher positions (resulting in stronger horizontal and vertical segregation) (Blossfeld et al. 2015: p. 18). The emergence and consolidation of so-called 'pink-collar occupational ghettos' is also fostered by a sizable service sector and/or public sector, since many of the employment opportunities offered in these areas of the labor market correspond better to female than male interests[113] (Anker et al. 2003; Blossfeld et al. 2015). Furthermore, it may be assumed that less protection from dismissal is accompanied by less pronounced vertical gender inequalities and vice versa. This is, firstly, due to the fact that in countries

[110] In this context, the degree of occupational specificity is also an important factor: "In countries with high occupational specificity, labor market entrants with the same type of education tend to end up in a narrower set of occupations compared to countries with low occupational specificity. Therefore, gender-specific educational choices lead to horizontal occupational gender differences, and these are likely to be more pronounced when linkages between education and the labor market are stronger (i.e., in systems with higher occupational specificity; see Borghans and Groot 1999; Smyth 2005; Smyth and Steinmetz 2008)" (Blossfeld et al. 2015: p. 17). However, a high level of occupational specificity may at the same time reduce vertical gender segregation, since educational certificates send clear and reliable signals to the market with reference to the skills of job candidates, which means that "[…] employers should rely more on school qualifications and will be less likely to select job seekers based on ascriptive characteristics (such as gender) (Blossfeld et al. 2015: p. 17).

[111] "Barriers in promotion and career development facing women are frequently referred to as the 'glass ceiling'" (Anker et al. 2003: p. 3).

[112] In this context Hakim (2006) speaks about 'adaptive women', referring to women who feel that achieving a work-family balance is more important than a career (Blossfeld et al. 2015).

[113] This is due to the fact that "[…] these jobs often translate traditional female household tasks into paid work (Esping-Andersen 1990) thereby attracting mainly women" (Blossfeld et al. 2015: p. 18).

with only a limited degree of employment protection it is easier and less cost-intensive to replace workers who take a career break to care for children, which is why employers carry a lower risk[114] and should therefore be more motivated not to discriminate against women (Blossfeld et al. 2015). Secondly, flexible dismissal rules reduce the significance of internal labor markets, which are biased against women, as it is more difficult for them to accumulate firm-specific human capital (Estévez-Abe 2001). Sometimes, it is also hypothesized that gender segregation in the labor market is the result of male dominance, i.e. a patriarchal ordering of society that excludes women from the best jobs and keeps them dependent on men (Blackburn et al. 2002; Halldén 2011). Indeed, even though genuine changes are in progress, at present there is "[…] no country where women have gained equal access to power[115]" (Blackburn et al. 2002: p. 520).

In Denmark, gender-based labor market segregation "[…] has long historical roots, but it is not only a token of a historical backlog; it is also being actively created in processes today […]", as has been described before (Bloksgaard 2011: p. 7). With regard to the horizontal dimension of labor market segregation, it can be observed that there is a remarkable gender bias in the distribution of Danish men and women across occupations (European Commission 2013). The majority of both males and females are active in occupations dominated by their own gender, and the high level of job segregation is predominantly attributable to the exceptionally large proportion of women employed in female-dominated occupations (Van der Lippe and van Dijk 2002; Dolado et al. 2003; Melkas and Anker 2003). Bloksgaard (2011: p. 7) notes that in 2007[116] only "[…] a quarter of the men and nearly one-third of the women in the Danish labor force worked in gender-mixed professions", i.e. that one gender accounts for 40-60 percent of the workforce. Examples of highly gender-dominated occupations (meaning that one gender makes up at least 80 percent of the workforce) are social services (such as childminders and other care-givers), healthcare, the police force, or electrical engineering (Dolado et al. 2003; Bloksgaard 2011). On Denmark's labor market, however, horizontal gender

[114] "The more demanding the job in terms of skill requirements and responsibilities, the higher the risks the employers have to bear" (Blossfeld et al. 2015: p. 18).
[115] For all 177 countries examined, the United Nations gender empowerment measure (GEM) is less than 1. Because "[…] 1 is the value representing equality, this means the advantage everywhere lies with men". Hence, according to the components of the GEM, "[…] everywhere women are under-represented in seats in parliament, in administrative, managerial, professional and technical occupations, with lower levels of income". For Denmark the GEM value is 0.875, which corresponds to rank 4 after Norway, Sweden, and Finland (Blackburn et al. 2002: p. 520; UNDP 2007).
[116] In 2007, the value of the IP index (explained in point 2.2.4) for gender occupational segregation in Denmark amounted to 27 percent (Bettio and Verashchagina 2009).

differences also become apparent in the form of sectoral segregation[117]. While accounting for nearly one third of total employment[118], around 70 percent of the employed females and only around 21 percent of the employed males work in the public sector[119] (Wehner and Abrahamson 2003; CEPS-ECHR 2004; Andersen 2008; Olsen 2009). In contrast to the female-dominated public sector, we see a male-dominated private sector, where around 80 percent of the employed men find a job (Wehner and Abrahamson 2003; Bloksgaard 2011).

Besides a high degree of horizontal gender differences, the segregated Danish labor market exhibits a moderate level of vertical gender inequalities (Blackburn et al. 2009). Evidence for this can be seen, for instance, in the pay gap between the genders, where on average men earn more than women (Andersen 2008). The principle reason for this lies in the aforementioned distinct under or over-representation of both genders in occupations and sectors (Olsen 2009; United Nations 2009). According to a report by the European Commission (2013), in 2011 Danish female workers on average earned 16.4 percent less than their male peers, which is still a relatively small [120] wage differential[121] in international comparison (Pedersen and Deding 2002; Melkas and Anker 2003). Although the gender wage gap in Denmark considerably decreased during the 1960s and 1970s, and nowadays "[…] women have overtaken the men on length of education and almost have caught up with the length of working experience […]", since then the trend of pay equalization has stagnated (Wehner and Abrahamson 2003; Olsen 2009: p. 5). A further issue is that although "[…] the Danish women are among the best educated in the world […]" they are usually occupying lower hierarchical positions than men, as indicated by the small proportion of females in managerial job positions which only rose a little in the recent past (Melkas and Anker 2003; Blöndal and Bendixen 2012: p. 5). In general, it seems to be easier for women to reach leading positions in female-dominated occupations and in the public sector (Melkas and Anker 2003).

[117] In 2007, the value of the IP index for gender sectoral segregation in Denmark amounted to 19 percent (Bettio and Verashchagina 2009).
[118] This corresponds to approximately 750,000 employees (UNPAN 2006).
[119] The public sector in Denmark comprises three territorial levels, namely the state sector, the counties/regions, and the municipalities (UNPAN 2006).
[120] Melkas and Anker (2003: p. 20) point out that the relatively small gender wage gap in the Nordic countries "[…] is not only a result of relatively high gender equality, but in large part due to the generally homogeneous social structure and small wage dispersion in the Nordic labour markets in general".
[121] The gender wage gap in Denmark is more pronounced in the private sector, and a large part of this gap remains unexplained (Pedersen and Deding 2002).

As can be seen from the information above, the key to understanding the seeming paradox whereby Denmark[122] combines gender egalitarian context conditions and high female employment with a considerable overall level of gender-based labor market segregation lies in the indispensable analytical distinction between the horizontal and the vertical component of segregation (Charles 2003; Emerek et al. 2003). In this way, the popular fallacy of considering overall segregation as a measure of gender inequality becomes obvious since, as now has been clarified, it is actually only the vertical dimension which can be regarded as evidence of inequality between male and female workers (Blackburn and Jarman 1997; Blackburn et al. 2009). Exhibiting a moderate level of vertical segregation and a high level of horizontal segregation, resulting in pronounced overall segregation, Denmark demonstrates that the "[…] particularly high overall segregation of the Scandinavian countries is entirely compatible with their egalitarian reputations" (Blackburn et al. 2009: p. 4). Yet even though the concentration of the genders in occupations and sectors does not automatically mean that either is disadvantaged, it should not be forgotten that horizontal segregation is correlated to the pay gap between men and women, and to some extent also limits individuals' freedom of choice because the more a professional field "[…] is dominated by one sex, the more it is seen as inappropriate for the other sex" (Blackburn and Jarman 1997; Blackburn et al. 2009: p. 6; Ministry of Gender Equality of Denmark 2014).

It is often held that the great degree of horizontal – and thus overall – labor market segregation is largely caused by the Danish welfare states' twin policy goals of furthering gender equality in employment and making sure that all adults are economically active (Melkas and Anker 2003). To achieve this, typical household tasks (including care for children, disabled, and elderly) are converted into paid work and to a large part provided by the public sector. While this helps women to participate equally in working life and supports their impressive employment rates, due to the strong sex-typing of these monetized activities (corresponding mainly to 'feminine' work tasks) it also has the side effect of increasing[123] sectoral and occupational segregation by gender (Dolado et al. 2003; Emerek et al. 2003; Melkas and Anker 2003; Bettio and Verashchagina 2009; Bloksgaard 2011). Nevertheless, it might be reasonably assumed that besides this mechanism other institutional and individual-level variables are of relevance, too.

[122] This also applies to the other Nordic countries.
[123] A further consequence of this situation is that the higher the female employment rates get, the more pronounced the gender segregation in the labor market becomes (Wehner and Abrahamson 2003). Bettio and Verashchagina (2009: p. 8) therefore state that a trade-off "[…] between the objective of raising women's employment and that of favouring de-segregation […]" may arise.

Because of the various micro and macro-level disadvantages of gender-based labor market segregation, Denmark is amongst those countries with long-standing traditions of desegregation initiatives (Anker et al. 2003; Bettio and Verashchagina 2009). These include, among other things, awareness-raising events on gender segregation, programs that counter stereotypes and encourage young boys and girls to pursue 'atypical' educational and professional ambitions[124] (thereby addressing the early roots of labor market segregation), efforts to promote equal pay, as well as agreements with public and private companies to increase the proportion of female managers (Bettio and Verashchagina 2009; United Nations 2009; Blöndal and Bendixen 2012). More recent studies show that things are changing, albeit observable developments are occurring rather slowly – especially in the case of horizontal gender differences which have remained more or less the same over the last 10 years (Anker et al. 2003; Bloksgaard 2011).

Now that the main features of the Danish labor market have been presented, I would next like to say a few words about the nature of transition processes from initial education to the world of work in Denmark. I am going to elaborate on this topic from a theoretical viewpoint, as well as by drawing on the findings of other studies. This is due to the fact that the focus of the empirical analyses carried out in point 2.2.5 will be on examining gender patterns in entrants' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market (thus when young adults have already successfully found employment), rather than looking at the transitional stage between school and work itself.

2.2.3 Transition processes from initial education to working life in Denmark

Denmark's youth transition regime and the role the educational system, the labor market, and the political framework play in its functioning

Garrouste and Loi (2011: p. 2) rightly notice that the changeover "[…] from school to work represents a central stage[125] in the lives of individuals and a key policy topic in many countries". The initial step into the labor market often goes (more or less

[124] The reason for this is that the Danish educational system is also heavily segregated by gender: In 2011, the Minister for Gender Equality announced that "[…] more than 40 % of the students choose an education where there are more than 75 % of students of their gender" (Augustin 2011: p. 14).

[125] Even though empirical evidence on this issue is mixed, individuals' career begin (optimal or non-optimal) is also important with a view to its effects on the subsequent employment biography (e.g., the risk of unemployment, inadequate jobs, or atypical employment) (Blossfeld 1985; Bukodi et al. 2006).

simultaneously) hand in hand with other transition processes from youth to young adulthood, such as becoming economically independent, establishing a household, or forming a family (Atchoarena 2000; Carlsen et al. 2011; Garrouste and Loi 2011). Since school-to-work transitions not only "[…] determine to what extent young adults are able to build up and secure a certain standard of living, to establish and maintain their social status, to attain and retain social relationships, and to develop a personal identity" (Bukodi et al. 2006: p. 2), but also "[…] contribute to raising the productive potential of the economy and to increasing social cohesion […]" (Quintini and Martin 2014: p. 4), governments are concerned with integrating youth smoothly into the labor market (Atchoarena 2000). The fact that the ease with which career starters can begin their first job differs greatly across European member states, yet indicates that varying institutional arrangements or mechanisms of labor market entry are at work (so-called 'youth transition systems') (Gangl 2000; Hanushek et al. 2011; Thompson 2013). Denmark is one of the countries where the integration of male and female school-leavers into working life is less problematic (Gangl 2000). The literature on youth transitions points out that three broad groups of interrelated factors are likely to play a part in this, pertaining to the educational system, the labor market, and the political framework (Thompson 2013).

In view of the Danish mainstream educational system (described in detail in point 2.1.3) the first conducive factor to be noted is the availability of a dual model[126] of vocational education and training at upper secondary level, which runs parallel to the general upper secondary track, and combines theoretical learning with practical experience at the workplace (Bowers et al. 1999; Thompson 2013; Quintini and Martin 2014). By this means, apprentices gain occupationally-specific skills that can be directly used at work, hence with no or only little need for initial training by the potential employer (Quintini and Martin 2014). Besides, since curricula and leaving certificates are developed in close cooperation between labor market actors and the state, there is a clear 'signaling effect' of vocational qualifications, offering greater transparency for employers and reducing the risk of unintended job mismatches (Bukodi et al. 2006; Ebralidze and Leth-Sørensen 2008; Bol and van de Werfhorst 2013; Thompson 2013). In addition, the country's

[126] Two alternative, and with regard to young individuals' labor market integration less favourable, ways of organizing vocational training, are, firstly, limiting it to theoretical learning in vocational schools (e.g., in the Netherlands, Sweden, and Hungary), and, secondly, non-standardized on-the-job-training (e.g., in the USA, Italy, and Spain). In the first case there is a lack of practical skills and networks, whereas in the second scenario the signaling effect of certificates is missing (Quintini and Martin 2014). These factors lead to higher youth unemployment, more occupational mobility because of mismatches between individuals and jobs, as well as to longer periods of initial job seeking (Gangl 2000; Bukodi et al. 2006).

educational system is in general moderately stratified and highly standardized. This has the advantage of providing firms with pre-selections of people as well as with reliable, national uniform information about their abilities (Bukodi et al. 2006). Since Denmark exhibits an occupational labor market system[127], individuals' qualifications (especially those acquired within the vocational upper secondary track) are furthermore oriented towards the skills needed on the labor market, leading to a close linkage between education and the employment system (Bukodi et al. 2006; Ebralidze and Leth-Sørensen 2008). On the whole, these conditions foster an environment where most young Danes are able to smoothly make the progression from initial education to work, with relatively short durations of job seeking (Quintini and Martin 2014). Also, there is good performance in terms of entrants' finding a first professional position that matches their qualifications, which diminishes mobility processes in early careers[128] and thereby accelerates their establishment on the labor market (Bukodi et al. 2006). For the aforementioned reasons, it can be assumed that graduates from vocational upper secondary education and training are most likely to quickly enter a first employment, since the dual system "[…] serves as an institutionalized bridge to the labor market" (Ebralidze and Leth-Sørensen 2008: p. 271; Garrouste and Loi 2011). Ebralidze and Leth-Sørensen (2008) have shown, for Denmark, that students who completed a general upper secondary or tertiary program, on the other hand, demonstrate a longer transitional period, although the authors claim that this may also be attributable to the fact that individuals with higher educational attainment tend to devote more time to finding a well-paid job (known as the 'reservation wage theory'). Also, many of these individuals take some time off between leaving education and starting work (e.g. for travelling) (Ebralidze and Leth-Sørensen 2008). As in the rest of Europe, young persons with no or low-level educational qualifications[129] "[…] have the greatest difficulties in getting a foothold on the labor market" (European Union 2010: p. 14).

[127] By contrast, internal labor market systems largely rely on school-based education which is decoupled from the market, with the result that there is a rather loose coordination between the educational system and the working world (Garrouste and Loi 2011).

[128] Nevertheless, in Denmark early careers are characterized by some instability. In the first years after labor market entry, it is not unusual for young professionals to return to education, move to another company, or be affected by unemployment (Brzinsky-Fay 2007; Ebralidze and Leth-Sørensen 2008). Following Hofäcker (2010: p. 14), these 'turbulences', however, "[…] largely reflect the flexible patterns of both the Danish labor market as well as its educational system". In general, "[…] young labor market entrants face similar opportunities and risks to those of mid-career employees" (Ebralidze and Leth-Sørensen 2008: p. 263).

[129] Besides education, further resources of school-leavers in job search are, for example, work experience (e.g. through internships or part-time jobs during studies), networks and contacts, or geographical mobility (Gangl 2000).

However, it is not just the educational system but also Denmark's labor market conditions which influence young people's ability to move from initial education to employment (Thompson 2013; Brzinsky-Fay 2015). As discussed in point 2.2.2, the country possesses a well-functioning labor market, thus benefitting from a favorable macroeconomic situation (Atchoarena 2000; Gangl 2000). The correlation between this state of affairs and labor market entrants' professional prospects can be put in a nutshell as follows: "If the economy is doing well, more young people will find jobs. When the economy staggers, the unemployment rate often increases rapidly" (Carlsen et al. 2011: p. 11). A good indicator for the overall state of the labor market is the degree of total unemployment[130] (where higher youth employment rates are associated with lower general unemployment rates), which in the case of Denmark is consequently rather small (Bowers et al. 1999; OECD 2000; Breen 2005). Another positive aspect of the Danish employment market is that, because of its dynamic nature, many job openings are created, making it easier for new school-leavers to start their working life (Confederation of Danish Employers 2007; Thompson 2013). This is achieved through a traditionally low level of employment protection legislation, which allows firms to implement different types of flexibility (Bukodi et al. 2006). According to Thompson (2013: p. 45) "[…] a tightening of restrictions on dismissing workers would protect workers who already have jobs, meaning that they will stay in-post for longer and fewer openings will arise, which again would harm the young".

The existing literature on school-to-work transitions moreover states that several political factors play an important role for young job seekers in Denmark (Gáti and Róbert 2011). These policies include, besides the already addressed rules governing the hiring and firing of employees, the presence of universal welfare schemes and employment support programs, in particular (Carlsen et al. 2011; Thompson 2013). Graduates who cannot find a job when they leave mainstream education are assisted by out-of-work benefits (or social assistance schemes) and public interventions intended to either rapidly re-insert them into education or to bring them into employment (Atchoarena 2000; Thompson 2013). In order to improve young people's labor market situation, the Danish government has passed several reforms during the last years which, inter alia, entailed an earlier start of activation measures for those aged under 30 (Hofäcker 2010). Additionally, special emphasis is placed on the provision of educational as well as occupational advice for

[130] Nonetheless, as is common within most countries, in Denmark total (and specifically adult) unemployment is also lower than youth unemployment (Bell and Blanchflower 2010; D'Ippolito 2011). D'Ippolito (2011: p. 16) explains that this is due to fact that young workers are "[…] among the most vulnerable and weak segment of the society, especially during economic crises".

adolescents and (young) adults (Danish Agency for Universities and Internationalisation 2012). With the 'Act on Guidance' (in effect since 2003, revised in 2006 and 2007) a transparent guidance system was set up, offering various services designed to "[…] help young people become more conscious of their abilities, interests and possibilities, thus enabling them to make decisions regarding education and employment on a qualified basis" (Danish Agency for Universities and Internationalisation 2012: p. 3). There are three types of institutions, namely 51 youth guidance centres (for individuals up to the age 25 years, focused on the transition from compulsory to upper secondary education or to the labor market), seven regional guidance centres (for students in upper secondary programs and youth or adults outside the education system who wish to start a program at tertiary level), as well as eGuidance (for citizens at any age, reachable via chat, telephone, SMS, and Facebook) (Danish Agency for Universities and Internationalisation 2012; IJAB 2013). In answer to rising unemployment because of the worldwide financial crisis of 2008, since 2009, furthermore, the agreement 'More young people in education and jobs' has been in effect (Carlsen et al. 2011). Its objective is "[…] to get young people with education in work, and young people with no education into training and education" (Carlsen et al. 2011: p. 9).

Indicators reflecting the success of Denmark's youth transition regime

The previously-described three main categories of underlying structural and institutional factors – relating to the educational system, the labor market, and the political context – positively contribute to the 'health' of Denmark's youth transition system, as some prominent indicators show (Thompson 2013). That it is mostly unproblematic for Danish school graduates to get into work is, for instance, reflected in the low youth unemployment rate (Thompson 2013). In 2010, the proportion of jobless 15-24 year-olds stood at around 12 percent, which by international standards is still a good performance (Bell and Blanchflower 2010). It nevertheless needs to be said that, even in Denmark, young people's unemployment level (amounting in 2008 to just 6 percent) rose in connection with the global economic crisis (Carlsen et al. 2011). This applies especially to male entrants, whose rate of unemployment since that time slightly exceeds that of females' (Carlsen et al. 2011). However, youth unemployment rates are often criticized for not being an adequate measure of school-leavers' overall labor market situation because they also include many young individuals who are looking for a job while engaged in regular education (Atchoarena 2000; Thompson 2013). Instead, it is proposed to consult the fraction of youngsters who are 'Not in Education, Employment or Training'

(abbreviated as NEET) and thus "[…] transitioning into employment as their primary activity […]" (European Union 2010; Thompson 2013: p. 9). Statistics from 2010 (likewise for the age bracket 15 to 24) reveal that Denmark has a NEET[131] share of only 5.9 percent, whereas the EU average lies at 12.8 percent (Piopiunik and Ryan 2012). Differences[132] between men and women are quite modest and not consistently in favor of one gender, though men of this age are somewhat more likely to be NEET than their female peers (European Commission 2014). A further possibility to measure the outcomes of youth transition systems is to observe the length of time between leaving initial education and finding a first job (Thompson 2013). In this regard, the Danish welfare state is among the countries where young market entrants' progression to employment is the fastest: On average, this period takes no longer than four to five months[133] (Garrouste and Loi 2011; Thompson 2013). Studies show, however, that female educational system leavers need some more time to get a job than their male counterparts (Ebralidze and Leth-Sørensen 2008).

2.2.4 Research objectives and methodology

Concrete research objectives of my empirical analyses

Given all the foregoing theoretical information, it can be stated that Denmark exhibits a labor market which – based on the 'golden triangle' of flexicurity – works well and accommodates an exceptionally high proportion of male and female personnel. At the same time, and despite the welfare state's ambition to prevent employment-related disparities between men and women, there is a non-negligible segregation by gender that provides cause for discussion. Yet even though extensive research is dedicated to this issue, to the author's best knowledge most scholars concentrate on the (quite heterogeneous) labor force as a whole, thus rarely considering the presence of gender inequalities at initial entry into work (Blossfeld et al. 2015). Additionally, although the study of overall segregation is certainly valuable, hitherto too little weight has been

[131] The group of young persons neither in education nor in the labor market is, however, also quite heterogeneous, which means that not necessarily all of them are having problems finding work. For example, upper secondary graduates in Denmark often decide to take a 'gap year' to see the world or to undertake community service before entering tertiary education (Bowers et al. 1999).
[132] In 2009, for example, Denmark's NEET rate (15-24) amounted to 4.9 percent for females, compared to 5.5 percent for males (European Commission 2010).
[133] Carlsen et al. (2011: p. 15) argue that "[…] many young people will experience short periods of unemployment between completed education and their first jobs. This is called friction unemployment and is a natural part of the transition from education to working life. If this kind of unemployment becomes long-term, however, those involved may have severe problems getting out of unemployment and into the labour market".

attached to its distinct component dimensions: Horizontal and vertical segregation (Blackburn 2009).

By answering the guiding question of subsection 2.2, which addresses gender patterns in young adults' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market, I aim to map imbalances between male and female entrants which may already appear at the outset of their professional careers. Hence, in contrast to many other studies about gender disparities in employment, the focus here is not on the entire labor force, but specifically on the group of entrants who became successfully integrated into the labor market by having found a first significant job (Blossfeld et al. 2015). As was outlined in point 2.2.3, transition processes from education to work itself, which generally constitute a popular research topic, are reasonably unproblematic for most young men and women in Denmark. Here, I go one step further, looking at gender differences regarding the *early outcomes of these transitions* – with particular reference to the prevalence of segregation. In line with the existing literature (Charles 2003; Emerek et al. 2003; Bettio and Verashchagina 2009; Blackburn 2009), to provide an adequate and full understanding of gender-based labor market segregation, attention is thus paid to both horizontal differences and vertical inequalities (Blackburn 2009). Since human capital is a decisive prerequisite for individuals' participation in employment, as well as for their ability to effectively compete with other labor market entrants for jobs and wages, it is important to also take account of job starter's level of educational attainment (Anker et al. 2003; Ministry of Gender Equality of Denmark 2014). Besides, it would be interesting to be able to observe shifts in educational levels and the markedness of segregation among young adults over a longer period of time; or, in other words, to find out if women's educational success in connection with the expansion of education has converted into labor market outcomes (Brzinsky-Fay 2015). Bearing all these factors in mind, the empirical analyses within this part of my work are geared toward answering the following three concrete research objectives:

1. Are there gender disparities in educational achievement levels of young individuals just starting their occupational careers, and how have they developed over time?
2. How pronounced are horizontal gender differences in the first significant job, and how have they changed across birth cohorts?

3. In how far do gender-based vertical inequalities occur at initial entry into work, to what extent are they influenced by educational and horizontal asymmetries[134], and how have they evolved over the course of time?

Methodology

To examine my research interests, I employ diverse sources of population-based Danish administrative data including the 'Integrated Database for Labour Market Research'. The annual data, collected since 1980, is kept by Statistics Denmark and particularly suitable for following persons as well as companies over time and for conducting longitudinal analyses of individuals' occupational trajectories and labor market attachment (for a detailed overview of the underlying databases please refer to subsection 1.5).

The population of interest covers young Danish adults who have left initial education and training and became successfully integrated into the labor market through a first significant job. I consider initial education and training as being finished if there is a time period of more than one year lying between two education and training spells. This aims at ensuring that persons who can be regarded as being only temporarily on the labor market, such as those taking a gap year before entering tertiary education, are excluded from the sample (Blossfeld et al. 2015). The first significant job is defined as one that lasts for a minimum of one year[135], including full-time and part-time employment as well as a small group of self-employed persons. Due to the fact that a larger part of the population experienced their first entry into work prior to the start of the utilised databases in 1980, I restrict the risk set to individuals born between 1960 and 1980. This allows me to monitor the transition from initial education to working life. The basic

[134] Studies have shown that there is a relationship between education and earnings, whereby additional years of schooling (equipping the individual with productivity-enhancing human capital) result in elevated wages in the labor market (Kjelland 2008). Similarly, "[…] the higher the educational level achieved, the better the characteristics of the first job in terms of prestige, authority, and security" (Blossfeld et al. 2015: p. 14). It is likely that the evolution of such vertical inequalities is moreover affected by horizontal gender segregation, since the latter determines to what extent men and women are concentrated in differently rewarded (with respect to both to monetary and non-monetary benefits) occupations and sectors (Blossfeld et al. 2015).

[135] "As soon as a school leaver approaches the status 'employment', integration into the labor market is taken to be completed. In longitudinal studies, the event of interest – that is, a status change – is usually qualified by some additional restrictions in order to overcome its limited validity as an indicator" (Brzinsky-Fay 2015: p. 37). Therefore, in my study the first job is then defined as the 'fist significant job' when it lasts for at least one year.

analysis sample hence contains a total of 1,337,832 persons[136], covering the period from 1980 to 2009.

As research methods, I basically apply descriptive analyses; in case of the third research interest multivariate models are also estimated. In order to be able to monitor trends over time and to capture the effects of educational expansion, the following four birth cohorts are created: 1960-64, 1965-69, 1970-74, and 1975-80. It should be noted that there are marginal deviations regarding the total number of entrants as well as the proportion of males and females in each of these cohorts, which, however, are unlikely to exert a significant impact on the results (see Appendix G).

Concerning the educational achievement level of male and female career starters (my first research interest) it is differentiated between 1) compulsory education or less, 2) vocational upper secondary education and training, 3) general upper secondary education, and 4) tertiary education. Besides the descriptive overview of entrants' educational attainment according to birth cohort and gender, by subtracting the percentage of women who have reached a certain level of education from the percentage of men with the same educational degree, I also illustrate the inherent gender-based educational differences within each of the cohorts. Hence, a positive value greater than zero indicates the overrepresentation of men in a particular educational category, whereas a negative value smaller than zero signifies their underrepresentation (Smyth 2002).

To address horizontal gender differences in the first significant job (my second research objective), I portray the entry of Danish men and women into distinct occupational sectors[137]. For this purpose I use Singelmann's[138] (1978) classification of occupations, which comprises the following six categories: 1) extractive sector, 2) transformative sector, 3) distributive services, 4) producer services, 5) social services, and 6) personal services. In order to additionally measure the extent to which male and female career beginners are distributed differently across these segments of the labor market, two

[136] The persons in my sample (676,773 male; 661,059 female – see also Appendix G) are between 19 and 33 years old.

[137] Since, as appositely observed by Bettio and Verashchagina (2009: p. 31), career "[…] decisions are taken primarily with jobs in mind, not sectors, and any sector tends to comprise very different types of jobs […]", when studying horizontal segregation I prefer to consult the more fine-grained occupational classification defined by Singelmann, instead of looking at public or private sector employment.

[138] Singelmann's (1978) "[…] classification is oriented toward industry sectors, that is, toward 'where people are doing their work' […]" (Blossfeld et al. 2015: p. 24). Within the classical three-sector theory, the extractive sector represents the primary sector, the transformative sector stands for the secondary sector, and distributive services, producer services, social services, and personal services belong to the tertiary sector.

standard indicators of occupational gender segregation are calculated: The Duncan and Duncan (1955) Index of Dissimilarity (ID index), and the Karmel and MacLachlan (1988) Index (IP index). Indices "[…] are the most commonly used summary measures of segregation[139] […]"; both the ID index and the IP index are well established in the literature (Bettio and Verashchagina 2009: p. 30; Blossfeld et al. 2015). The ID index is defined as follows:

$$\mathrm{ID} = \frac{1}{2}\sum_{j=1}^{J}\left|\frac{F_j}{\mathrm{F}} - \frac{M_j}{M}\right|$$

with

F = total number of females in employment;
M = total number of males in employment;
F_j = number of employed females in occupation j;
M_j = number of employed males in occupation j;
J = number of occupations.

The IP index is measured by the subsequent mathematical formula:

$$\mathrm{IP} = \frac{1}{T}\sum_{j=1}^{J}\left|\frac{M}{\mathrm{T}}F_j - \frac{F}{\mathrm{T}}M_j\right|$$

with

T = total number of employed persons[140]; all other parameters are defined as before.

A common feature of these two indices is that they are "[…] based on the understanding that segregation means a different distribution of women and men across the occupational categories, and the more equal the distribution over occupations for women and men, the less the segregation" (Emerek et al. 2003: p. 7). Moreover, both indices can be "[…] interpreted[141] as the proportion of the workforce (persons in employment) which would need to change jobs in order to remove segregation" (Emerek et al. 2003: p. 8). However, while (in percentage terms[142]) the ID index ranges from 0 (no segregation) to 100 (complete segregation) since the change of occupation required to arrive at an equal

[139] According to Bettio and Verashchagina (2009: p. 30) it is "[…] generally accepted that no single index is fully satisfactory, and that different indexes are appropriate for different purposes".
[140] Hence, T is equal to the sum of F and M.
[141] Emerek et al. (2003: p. 6) note that in the "[…] special case, where women's share or employment equals that of men's, the ID index can be interpreted as the proportion of women (or men) who would have to change jobs to remove segregation".
[142] In the results part (Figure 2.13), I shall present index results transformed into percentage shares.

distribution in the labor market is attributed to one sex only (men or women), the IP index varies between 0 (no segregation) and 50 (complete segregation)[143]. As the ID index is quite sensitive towards sample sizes and the number of categories, I also rely on the more robust IP index which has the further advantage[144] of taking differences in the male and female share of employment into account[145] (Emerek et al. 2003; Bettio and Verashchagina 2009; Blossfeld et al. 2015).

Finally, I use men's and women's gross annual earnings[146] (logarithmized, inflation-adjusted, in Euro) to examine gender-based vertical inequalities at initial entry into work (my third research objective). Besides the reporting of descriptive[147] results, I also carry out multivariate analyses by adopting ordinary least squares regression. The linear regression models are constructed as follows: The first model serves to evaluate the total effect of gender on labor market entrants' earnings (being male constitutes the reference category). Afterwards, this baseline model is expanded incrementally in different combinations, thereby referring to the subsequent set of explanatory variables: birth cohort (cohort 1960-64 as the reference category), interaction between being female and birth cohort (female x cohort 1960-64 as the reference category), level of educational achievement (tertiary education as the reference category), interaction between being female and educational achievement level (female x tertiary degree as the reference category), type of occupation entered (Singelmann classification with the transformative sector as the reference category), female proportion in the entered occupation (Singelmann classification), and interaction between being female and female proportion in the occupation entered.

The following presentation of the descriptive and multivariate results is structured along the three research objectives outlined above, hence encompassing the subsequent themes: Gender disparities in educational achievement levels of young career starters, horizontal gender differences in the first significant job, and finally vertical gender inequalities at initial entry into work.

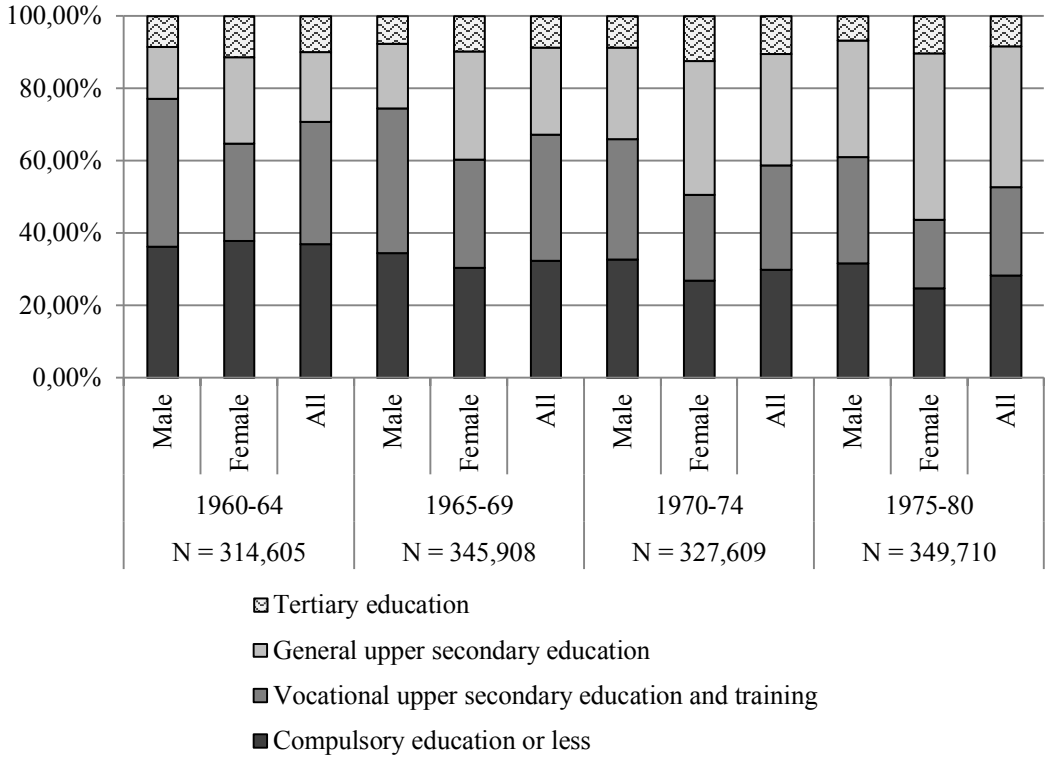
[143] Accordingly, the higher the value of the ID or the IP index, the more pronounced the extent of segregation (Kristen 2005).
[144] The value of the ID index depends on the rate of female employment, too, but "[…] only indirectly, via changes in the occupational structure that accompany increases or decreases in the proportion of women in the workforce" (Bettio and Verashchagina 2009: p. 31).
[145] It should, however, be mentioned that the result of this could be that a change in the IP index over time "[…] may be due to a change in dissimilarity or to a change in the proportion of women in employment – eventually to a combination of the two" (Emerek et al. 2003: p. 9).
[146] "The advantages of the earnings measure are that it has a continuous scale, allows a straightforward interpretation, and varies within occupations" (Blossfeld et al. 2015: p. 26).
[147] For the descriptive analyses with regard to the third research interest (Figure 2.14), I use the mean value of men's and women's gross annual income.

2.2.5 Results of the empirical analyses

Gender disparities in educational achievement levels of young career starters

In reference to the first research objective, Figure 2.10 depicts the descriptive findings on male and female labor market entrants' educational attainment level by birth cohort. As a first observation it can be stated that the total proportion of young adults exhibiting no more than compulsory education at initial entry into work decreases over time, dropping from 37.04 percent in the oldest cohort 1960-64 to 28.33 percent in the youngest cohort 1975-80. Yet, with around 13 percentage points (from 37.82 percent to 24.78 percent) this decline is greater among women; for men, the drop amounts to only around 5 percentage points, namely from 36.20 percent to 31.59 percent. Furthermore, I note that across birth cohorts, fewer and fewer career beginners enter first employment with a vocational upper secondary education and training degree, although this type of upper secondary education remains constantly more popular among males than among females. In contrast, holding a general upper secondary qualification in the first significant job clearly becomes increasingly common over the observation period. Although this is true for both genders, women are continuously outcompeting men: In in the youngest birth cohort 1975-80 nearly half of all female entrants achieved a general upper secondary degree, compared to around one-third of their male contemporaries. By and large it can be said that the percentage of men and women who complete the general track of upper secondary education roughly doubles across cohorts. Finally, the figures show that a tertiary level of education at the time of first entry into working life is, in general, fairly rare, even more so for males. It must, however, be noted that these results should be viewed cautiously, since it is likely that the very young persons in my sample have not yet finished tertiary education. Altogether my findings indicate that, over the course of time, both male and female entrants bring higher educational levels to their first significant job. In the 1975-80 cohort, most men (32.17 percent) and women (46.09 percent) have a general upper secondary degree.

Figure 2.10: Male and female entrants' level of educational achievement by birth cohort (results as percentages)

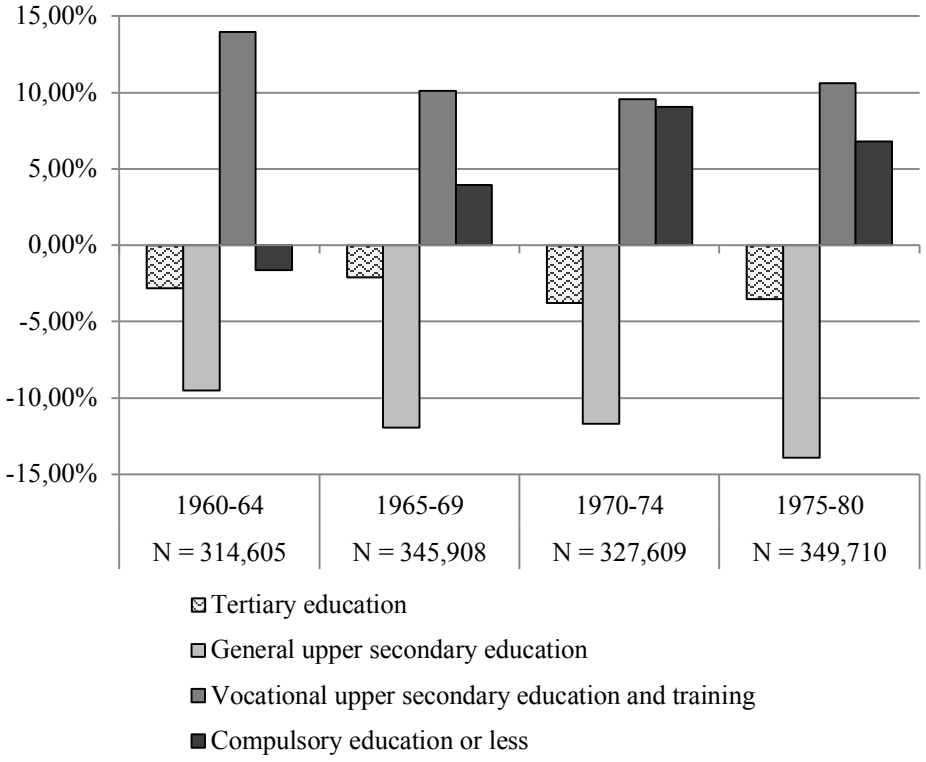


Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2015: p. 212).

On the basis of the results presented earlier, Figure 2.11 serves to more clearly visualize the differences in male and female entrants' level of educational achievement by birth cohort. The illustration highlights that, while in the 1960-64 cohort, females entering first employment were around 2 percentage points more likely to only have a compulsory level of education (or less), from then on the situation is reversed, with a gap that goes up to 6.81 percentage points in the 1975-80 cohort. Moreover, even though the difference decreases from around 14 percentage points in the oldest birth cohort (1960-64) to around 11 percentage points in the youngest birth cohort (1975-80), men consistently outnumber women with regard to vocational upper secondary education and training, whereas the opposite is true in terms of general upper secondary education. In the 1975-80 cohort, females are 13.92 percentage points more likely to have finished a program of the general upper secondary track at first entry into work. Hence, because only a general upper secondary degree qualifies for studies on tertiary level, it is "[…] the quasi dead-end vocational training track that educates more men […]" than women (Horn and Keller 2015: p. 292). It also becomes clear that across all birth cohorts female labor market entrants are between around 2 to 4 percentage points more likely to hold some kind of

tertiary degree in their first significant job than their male counterparts. Yet, as has been said before, the latter findings should be considered with caution.

Figure 2.11: Differences in male and female entrants' level of educational achievement by birth cohort (results as percentages)



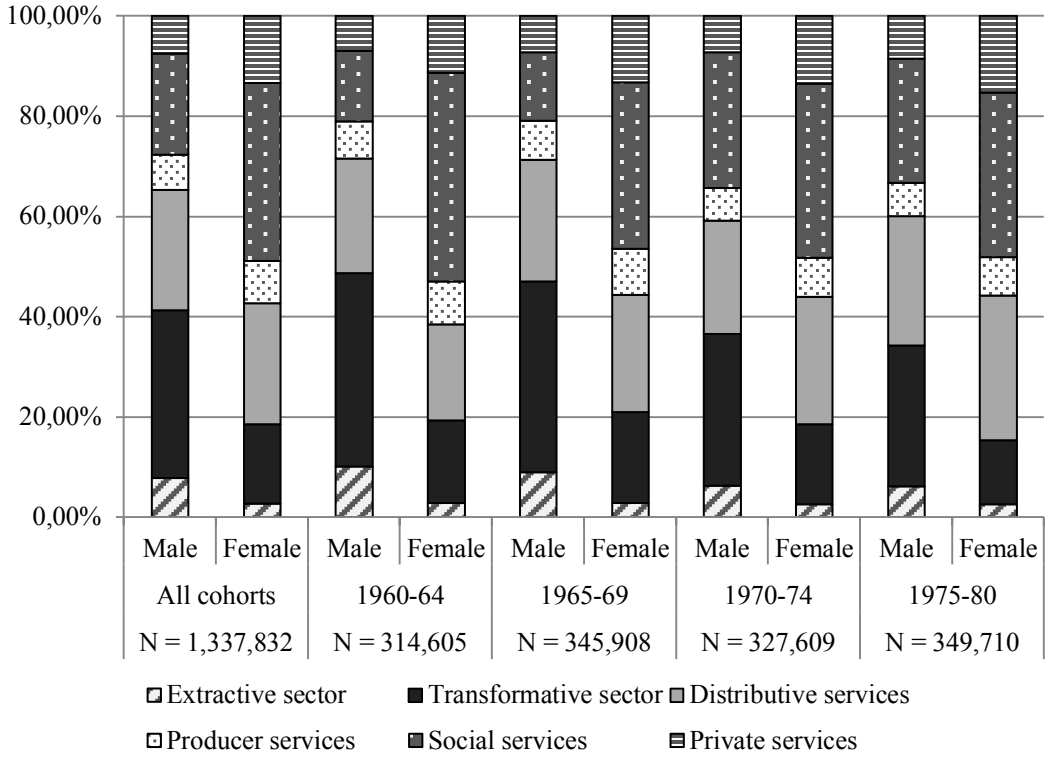
Source: Own calculations based on population register data maintained by Statistics Denmark.

Horizontal gender differences in the first significant job

Looking at my second research objective, and thus at the horizontal dimension of gender segregation in the Danish labor market, Figure 2.12 shows the descriptive results relating to young professionals' distribution across Singelmann's occupational sectors by birth cohort and gender. With all four cohorts added together, it appears that only a small percentage of male and female entrants start their working life in the extractive sector, namely an average of 7.72 percent vs. 2.69 percent. It also becomes obvious that, for both genders, employment in this sector decreases over time. Concerning the transformative sector, the figures reveal that the percentage of men taking up their first significant job in this occupational field is continuously around twice as high as that of women. However, also within this sector, employment rates decline across birth cohorts – particularly among male labor market entrants (from around 39 percent in the 1960-64 cohort to around 28 percent in the 1975-80 cohort). The distributive services display the smallest

gender-specific differences: On average, 23.94 percent of men and 24.17 percent of women begin their work career in this occupational area. Only a small, but relatively similar, proportion of both genders enters the field of producer services, whereby over the course of time no major changes occur. By contrast, within the social services an interesting development has taken place: While the percentage of females finding their first significant job in this sector markedly decreases from around 42 percent to around 33 percent, that of males experiences an increase from around 14 percent to around 25 percent. Nevertheless, even in the youngest birth cohort (1975-80), women are still more likely to enter the social services sector than their male contemporaries (32.73 percent vs. 24.70 percent). The same holds for the personal services, where on average only around 8 percent of male but around 14 percent of female entrants are employed. Moreover, in this professional field the gender gap widens across birth cohorts. In light of these results it can be said that the young Danish men and women in my sample are indeed opting for quite different occupational sectors, and that it is the transformative sector which attracts the greatest proportion of male entrants (33.56 percent on average) and the social services which take up the largest share of female job beginners (35.52 percent on average).

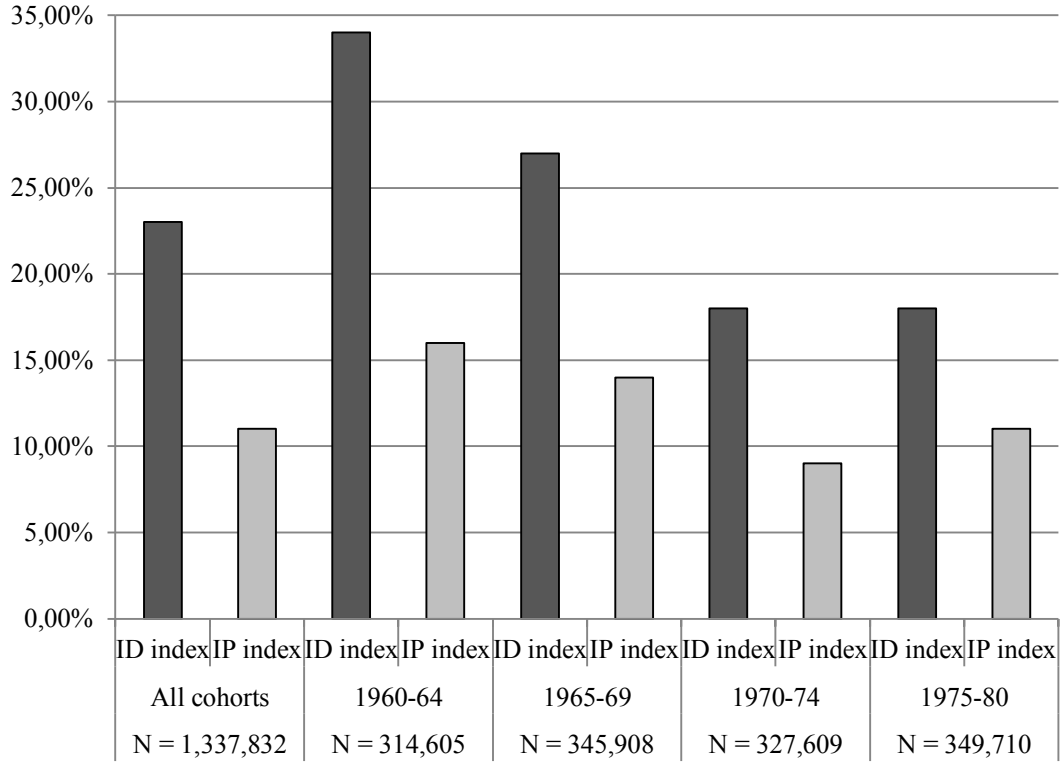
Figure 2.12: Male and female entrants' distribution across Singelmann's occupational sectors by birth cohort (results as percentages)



Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2015: p. 214).

Based on the results given here, Figure 2.13 portrays Duncan and Duncan's (ID) and Karmel and MacLachlan's (IP) indices of gender segregation for initial employment in Singelmann's occupational sectors by birth cohort. As was to be expected, it can be seen that both indices underline the existence of horizontal gender differences at first labor market entry; however, they also show that the degree of horizontal segregation in the Danish labor market has weakened over time (especially for the cohorts born between 1960 and 1974). While for the oldest birth cohort (1960-64) the ID index states that 34 percent of men (or women) would have to change jobs in order to achieve an equal gender distribution in the labor market, in the youngest birth cohort (1975-80) the share amounts to 18 percent (16 percent vs. 11 percent according to the IP index). For all cohorts, the ID index stands at 23 percent and the IP index at 11 percent.

Figure 2.13: ID and IP indices of gender segregation for employment in Singelmann's occupational sectors[148] by birth cohort (results as percentages)



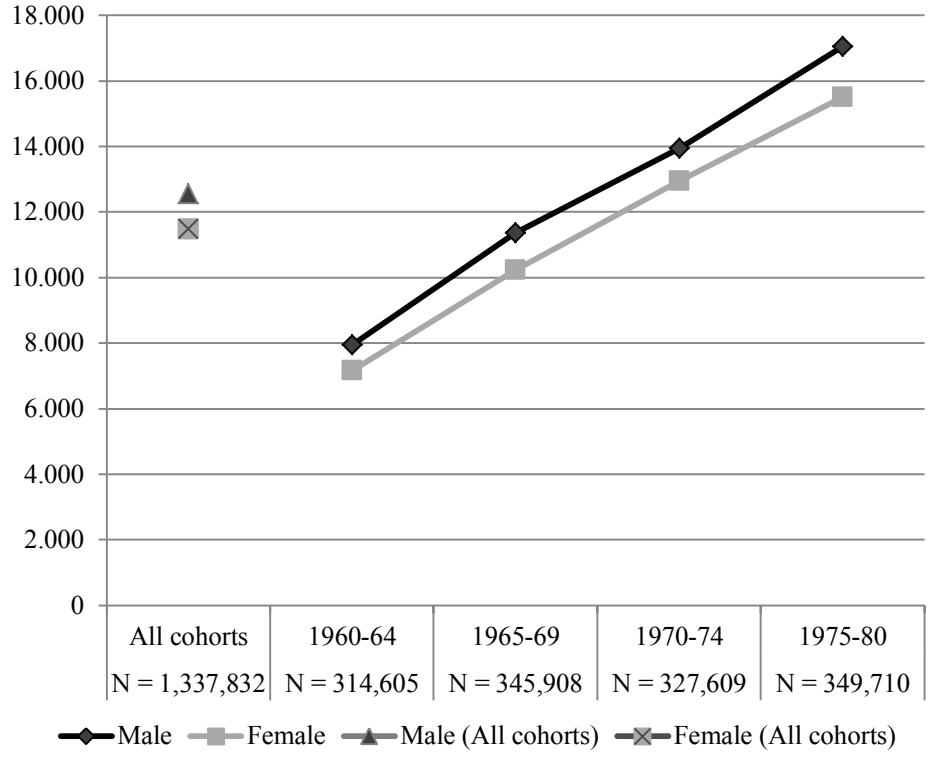
Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2015: p. 214).

[148] Number of sectors = 6.

Vertical gender inequalities at initial entry into work

Turning to the investigation of gender-based vertical inequalities at initial entry into work, addressed by the third research interest, Figure 2.14 descriptively presents male and female entrants' mean gross annual earnings over birth cohorts. For all cohorts taken together, men's yearly salary in the first significant occupation is around 12.500 Euros, while that of women amounts to around 11.500 Euros. A closer look at the trend of the curves reveals that, over the observation period, both genders now earn higher incomes at the outset of their employment career: In the 1960-64 cohort, men's mean gross annual earnings were around 8.000 Euros (around 7.000 Euros for women), whereas in the 1975-80 cohort this had increased to around 17.000 Euros (around 15.500 Euros for women). At the same time, however, female labor market entrants' earnings are consistently slightly below that of their male contemporaries. Despite this, the relative income difference between the genders diminishes across birth cohorts.

Figure 2.14: Male and female entrants' mean gross annual earnings by birth cohort (results in Euro)



Source: Own calculations based on population register data maintained by Statistics Denmark.

Finally, the multivariate findings of the linear regression models predicting men's and women's gross annual earnings in the first significant job are set out in Table 2.6. First, it is worth noting that a clear pattern according to gender emerges: Women earn, on average, significantly less at first entry into work than their male counterparts, and this result continues to be valid after controlling for birth cohort. Nonetheless, the income inequalities between young male and female professionals are lessening over the course of time[149]. When looking at the effect of entrants' level of educational achievement, I find that both highly educated men and highly educated women earn markedly higher incomes at the beginning of their work career than the less well educated. As regards the interaction between gender and educational attainment, the table shows that females are penalized across all educational levels, and that this applies in particular to the less-educated and to those with tertiary degrees. In turn, among entrants with a medium level of education, the gender gap in gross annual earnings is the smallest. When also testing the influence of horizontal gender differences in the first significant job, another interesting result appears, namely that once the female proportion in the occupation entered is taken into account, most of the values associated with the sectors classification according to Singelmann change their direction (Model 8 vs. Model 9). This suggests that men's and women's unequal distribution across occupations contributes to the observed gender wage gap. In other words: The gross annual income is lower in sectors with a high share of females. Besides, it should be mentioned that even after controlling for the female proportion, the gender effect remains significant, which means that female entrants' lower earnings cannot be explained entirely by including the presence of women in each occupational sector in the analysis. Lastly, when considering the interaction between being female and the proportion of females in the entered occupation, it becomes obvious that women are less disadvantaged in terms of earnings in more feminized branches.

[149] However, further multivariate analyses (not shown here) demonstrate that the disadvantaging of women remains significant.

Table 2.6: Linear regression models predicting male and female entrants' gross annual earnings (results as coefficients; N = 1,337,832)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Gender (ref. Male)										
Female	-0.16**	-0.14**	-0.18**	-0.08**	-0.11**	-0.12**	-0.05**	-0.07**	-0.04**	-0.28**
Birth cohort (ref. 1960–64)										
Birth cohort 1965–69		0.38**	0.37**	0.39**	0.40**	0.39**	0.39**	0.40**	0.37**	0.38**
Birth cohort 1970–74		0.58**	0.54**	0.64**	0.61**	0.63**	0.64**	0.62**	0.59**	0.59**
Birth cohort 1975–80		0.79**	0.75**	0.90**	0.87**	0.90**	0.91**	0.89**	0.86**	0.86**
Female × Birth cohort 1965–69			0.00		-0.01**			-0.01**		
Female × Birth cohort 1970–74			0.09**		0.06**			0.04**		
Female × Birth cohort 1975–80			0.08**		0.07**			0.05**		
Educational level (ref. Tertiary education)										
Compulsory education or less				-0.92**	-0.91**	-0.91**	-0.93**	-0.93**	-0.91**	-0.90**
Vocational upper secondary education and training				-0.37**	-0.37**	-0.41**	-0.39**	-0.39**	-0.38**	-0.37**
General upper secondary education				-1.15**	-1.15**	-1.20**	-1.15**	-1.15**	-1.13**	-1.12**
Female × Compulsory education or less						-0.02**				
Female × Vocational upper secondary education and training						0.08**				
Female × General upper secondary education						0.08**				
Horizontal – Singelmann's sectors (ref. Transformative sector)										
Extractive sector							-0.07**	-0.07**	-0.21**	-0.24**
Distributive services							-0.12**	-0.12**	0.12**	0.17**
Producer services							-0.06**	-0.06**	0.39**	0.47**
Social services							-0.18**	-0.18**	0.62**	0.73**
Private services							-0.19**	-0.19**	0.36**	0.44**
Female proportion									-0.02**	-0.02**
Female × Female proportion										0.01**
Constant	9.25**	8.80**	8.82**	9.45**	9.47**	9.47**	9.55**	9.55**	10.10**	10.26**

Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2015: p. 215, 216).
Note: **p < 0.01. *p < 0.05. +p < 0.10.

2.2.6 Interim summary and discussion

As argued by Bettio and Verashchagina (2009: p. 27), "[…] there is perhaps no better way to assess how the position of women in employment vis-à-vis men has evolved in industrialised countries than to analyse change in employment segregation by gender and in the gender wage gap". This statement refers to some major trends which have taken place in modern societies over the past decades, notably females' rising educational attainment and participation in paid work (Halldén 2011). Also in Denmark, a country traditionally oriented toward gender-egalitarian values, the labor force meanwhile consists in almost equal parts of well-educated male and female workers (United Nations 2009; Blossfeld et al. 2015). This is, however, contrasted with a persistent horizontal and vertical segregation of the Danish labor market according to gender (Melkas and Anker 2003).

In order find out whether and to what extent such gender-specific structures are already solidified in the very early stages of individuals' employment careers, as well as if women's professional chances have improved in consequence of their advanced educational levels, the goal of this subsection was to study gender patterns in young adults' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market. For this purpose, in the course of the descriptive and multivariate investigations three concrete themes have been covered: Firstly, gender disparities in educational achievement levels; secondly, horizontal gender differences (portrayed by means of individuals' entry into distinct occupational sectors defined by Singelmann); thirdly, vertical gender inequalities (measured on the basis of entrants' gross annual earnings) – all of them observed over a longer time period. In sum, the results of the empirical analyses have made it clear that besides gendered educational attainments, labor market entrants in Denmark do indeed already exhibit gender-based segregation patterns on both the horizontal and the vertical dimension. However, I also found that both horizontal and vertical gender segregation has weakened across birth cohorts of young Danish job starters. To conclude this subsection, I would like to give a brief summary of the main findings in response to the three research questions examined here.

Since it is a well-established fact that there is a close relationship between education and labor market opportunities, I started with a consideration of male and female entrants' educational attainments and their development across birth cohorts. In general, it appeared that, over the course of time, both men and women display higher educational

levels in their first significant employment, mirroring the educational expansion which began back in the 1960s. Nevertheless, although the trend towards advanced qualification is observable for both genders, the results also revealed that women have benefited more from the expansion of education than men: For instance, while the share of male job starters holding a general upper secondary degree rose by 17.84 percentage points to 32.14 percent in the youngest cohort (1975-80), the proportion of females increased by 22.24 percentage points to 46.09 percent over the same time period. Hence, in this regard Danish women have not only caught up with men; they have actually overtaken them.

The aforementioned changes gave grounds for expecting that gendered occupational patterns might perhaps also have converged across birth cohorts – provided that horizontal gender differences are already detectable at the time of labor market entry. As the corresponding analyses have shown, it is in fact the case that young men and women just starting their professional careers are already opting for jobs in quite distinct occupational sectors. Whereas the distributive services as well as the producer services are chosen by a relatively similar percentage of males and females in my sample, both the extractive sector and the transformative sector are consistently dominated by male entrants (though activity rates in these sectors have generally decreased over time). Conversely, the fields of social services and private services prove to be continuously female-dominated. It is, however, worth emphasizing that, in terms of the social services, two opposing trends emerged: While across cohorts the fraction of women becoming active in this area of the labor market fell by 2.79 percentage points (to 32.73 percent), the share of men increased by 4.56 percentage points (to 24.70 percent). As Blossfeld et al. (2015: p. 362) suggest, this is likely to be "[…] driven by a decline in the production/transformative sectors that pushes men to start their careers in service occupations". Despite these gender-specific entry patterns, which are, inter alia, certainly related to continuing differences in men's and women's choice of study field and career path, the values of both the ID and the IP index furthermore illustrated that, over the observation period, horizontal segregation has gone down in Denmark (Emerek et al. 2003).

In order to provide a comprehensive picture of gender segregation on the Danish labor market, I finally aimed to shed light on the occurrence and development of vertical gender inequalities at first entry into work, as well as to what extent the latter are affected by the educational and horizontal asymmetries described above. It turned out that – despite their higher educational qualifications – females are, on average, paid a

significantly lower annual salary than their male contemporaries, and even though this gender pay gap diminishes over the course of time, it does not disappear completely. Also, the female disadvantage in vertical outcomes is smaller among the mid-educated, whereas in case of both the lower and the higher educated it is relatively larger. The latter fact probably indicates that highly-educated women face a 'glass ceiling' in their pay structures (Rubery et al. 2002). Horizontal gender segregation also accounts for gender wage differentials in young Danes' first significant job: Annual earnings are considerably lower in sectors employing large numbers of female entrants. Nevertheless, I also found that women are less penalized in terms of economic returns when they enter more feminized occupational sectors. In the end, it could be argued that "[…] not only the level of education (degree) but also the type of education (specialization) is central to segregation processes […]", and as long as gender guides the allocation of individuals to certain fields of study, men and women will be channelled into "[…] heterogeneous occupations with different rewards" (Blossfeld et al. 2015: p. 9). Moreover, Blossfeld et al. (2015: p. 5, 9) point out that "[…] even if actual family formation affects labor market entry only to a limited extent, expectations about future family formation on the side of both women and employers may still do so. […] Hence, […] women might choose educational paths leading to less rewarding jobs because they anticipate future family obligations and career discontinuities. Thus, young women might not necessarily strive to maximize their occupational rewards (such as earnings) by looking for the 'best' possible jobs given their level of human capital. Instead, they might prefer jobs with more flexible working hours and security that make it easier to reconcile work and family roles but are paid less".

During the course of this work I have now considered the role of gender for children's educational careers within tracked Danish post-compulsory education training, as well as gender patterns in young adults' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market. What relevance will gender have for adults' participation in diverse forms of Danish adult learning and the related labor market returns, investigated in the third and final empirical subsection?

2.3 ADULTS' LABOR MARKET RETURNS FROM PARTICIPATION IN DIVERSE FORMS OF DANISH ADULT LEARNING AND DIFFERENCES BY GENDER

2.3.1 Preliminary remarks

Today more than ever education constitutes a lifelong process

As Blossfeld (2009: p. 2) rightly points out, nowadays in particular, "[…] education is a lifelong process in which individuals continually learn in formal[150], non-formal[151], and informal[152] environments". The idea and concept of lifelong learning – which was considerably influenced by transnational organizations[153] and implies that learning activities "[…] should take place at all stages of the life cycle (from the 'cradle to the grave') […]" – is not new; however, only recently has it begun to receive increasing attention in modern societies (Green 2003: p. 3; Sprogøe 2003; Milana 2008; Kil et al. 2013). Although the issue of education has recently been catapulted to the centre of public debates, especially following the first PISA study in 2000, for a longer time national investments and reforms still have mostly been targeted at children and youths within the formal education and training system. However, the educational needs of individuals who have already left initial education and entered the labor market had been widely neglected. This is all the more surprising in view of the fact that these persons represent the largest share of our societies' populations (Sprogøe 2003; Kilpi-Jakonen et al. 2014).

Yet in the meantime, both nationally and at European level, the interplay of lifelong learning and education in relation to adults is coming to the forefront (CEDEFOP and EURYDICE 2001; Sprogøe 2003). According to the European Union, lifelong learning encompasses "[…] all learning activities undertaken throughout life, with the aim of improving knowledge, skills/competences and/or qualifications for personal, social and/or

[150] Formal learning takes place "[…] within institutions established primarily to deliver education and training […]" (Clark 2005: p. 53). Moreover, it usually leads to recognized certificates (Laal and Salamati 2012).

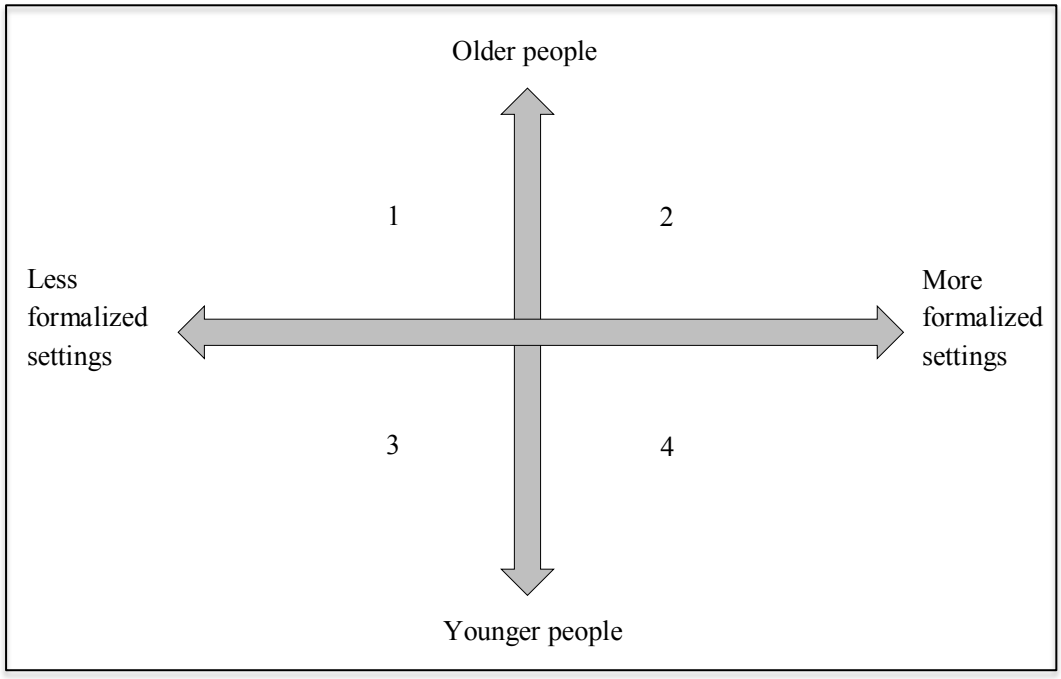
[151] Non-formal learning is also organized, involves a teacher of some kind and may be institutionalised (Kilpi-Jakonen et al. 2014). However, it normally does not lead to an official qualification (Boeren 2009).

[152] Informal learning is characterized "[…] by an absence of primary intent. It can occur almost anywhere, but as a by-product of other activities. It is often unplanned and without explicit emphasis on learning, yet may still lead to the acquisition of valuable skills, knowledge and attitudes" (Clark 2005: p. 53). For this reason, informal learning is often referred to as 'at-random learning', 'accidental learning' or 'incidental learning' (Boeren 2009).

[153] This includes, for example, the Council of Europe, UNESCO, OECD or the EU (Kil et al. 2013).

professional reasons […]" (Badescu and Saisana 2008: p. 13). The 'lifelong' dimension of this approach refers to the entire population (regardless of age), while the 'learning' dimension stretches as far as possible and assumes that learning not only takes place in formal, but also in non-formal and informal settings (Sprogøe 2003). Figure 2.15 below depicts the aforementioned dimensions of lifelong learning, with the vertical axis signifying that individuals learn throughout the whole lifespan and the horizontal axis denoting the broad range of potential learning settings and contexts (Boström et al. 2001; Clark 2005). As mentioned before, in recent years, Western countries have been putting a stronger focus on fields[154] number 1 and 2, hence on (more or less formalised) adult learning (Sprogøe 2003).

Figure 2.15: The dimensions of lifelong learning



Source: Own illustration based on Sprogøe (2003: p. 7) and Boström et al. (2001: p. 9).

The way that this awareness of educational opportunities later in life has moved from the margins to the mainstream is a result of several societal trends which have made it indispensable to ensure that individuals have up-to-date skills throughout the entire lifespan, hence calling for new forms of learning that fit less well in the previously known standard life cycle: "Rather than seeing the educational phase as a clearly demarcated life stage between early childhood and the transition to adulthood, we tend to see present-day

[154] Fields number three and four relate to younger people's (formal, non-formal and informal) educational activities (initial education and training within formalized settings is localized in field number four) (Sprogøe 2003).

life courses as more blurry, with periods of mixed statuses of schooling and work, and […] re-entry into learning as adults" (Kilpi-Jakonen et al. 2014; Van de Werfhorst 2014b: p. xv). First of all, populations are ageing as a result of declining fertility rates and increasing life expectancy (Commission of the European Communities 2011). All countries are experiencing a growth in the numbers of adults and elderly people; projections of demographic developments reported by the United Nations in 2010 predict that, over the next 40 years, the world's number of people aged 60 years and older will almost triple (Sprogøe 2003; Findsen and Formosa 2011). This means that "[…] demand for educational provision gradually shifts through the age groups […]", with an increasing need for constantly updating and upgrading the skills of the shrinking working age population[155] (Green 2003: p. 3). Second of all, accelerated technological change as part of the globalization process leads to a situation where demand for more knowledge-intensive jobs is rising, and where skills acquired in initial education become obsolete more quickly (Dieckhoff 2007; Kilpi-Jakonen et al. 2014; Van de Werfhorst 2014b). Therefore, continuously expanding and refreshing worker's knowledge, skills, and competences following entry into the labor market becomes ever more important (Dieckhoff 2007; Obadić 2009; Van de Werfhorst 2014b). As summed up by Van Weert (2005: p. 15), in the current knowledge society "[…] lifelong working implies lifelong learning".

In light of these developments, the promotion of lifelong learning – or more precisely, adult learning as an integral part thereof – is now central to policy discourses throughout the European Union, aimed both at strengthening member states' economic competitiveness and reducing social inequalities (Commission of the European Communities 2011; Dämmrich et al. 2014; Milana and Holford 2014). Since increasing adults' participation in lifelong learning is thus a major political goal, the European Commission has set the target that by the year 2020 an average of at least 15 percent of individuals aged between 25 and 64 should, in one form or another, take part in adult learning (Boeren 2009; Commission of the European Communities 2011). Yet, results from the European Labor Force Survey[156] for 2009 show that the attainment of the 2020 benchmark will require additional efforts, as at the EU27 level on average only 9.3

[155] In order to prevent labor deficits and to disburden old-age pension funds, many countries are already raising the retirement ages of both men and women. The prolongation of working lives, however, makes it necessary to invest in later-life learning and to retool older workers' skills (Findsen and Formosa 2011; Kilpi-Jakonen et al. 2014).

[156] The European Labor Force Survey asks about participation in (formal and non-formal) adult learning activities in the 4 weeks prior to the survey (Commission of the European Communities 2011).

percent of persons in this age group stated that they participated in some form of lifelong learning. There are, however, remarkable differences between the member states: The Nordic countries (Denmark, Sweden, Finland, and Iceland) and the UK rank among the top performers, while Bulgaria, Romania, Greece, Croatia, and Turkey exhibit the lowest participation rates[157] (Badescu and Saisana 2008; Commission of the European Communities 2011).

Denmark traditionally places great emphasis on both genders' continued education and training across the life course

Even though there is no one-dimensional Nordic model of adult learning, some common features can be identified, such as high participation rates and large shares of public funding, as well as public suppliers of learning (characteristics of the so-called 'public good' model) (Antikainen 2006; UNESCO Institute for Lifelong Learning 2009). Following the UNESCO Institute for Lifelong Learning (2009: p. 65), the success of later-life learning in the Nordic countries can probably be explained by the fact "[…] that, for various historical, social and cultural reasons, these countries have established public policies that promote adult education, foster favourable structural conditions, target barriers to participation, and ensure that disadvantaged groups have equal opportunity to participate in adult education". Denmark stands out as having the greatest number of participants in adult learning, not only within the group of Nordic countries, but also at the European level, and is therefore often cited as a prime example of the very best practice in this area (CEDEFOP 2012).

This finding is mainly due to the circumstance that Denmark looks back on a long and strong tradition of lifelong learning, which in the national context is defined as "[…] the principle that all citizens should have the opportunity to return to education throughout life […]" (Cort 2002; OECD 1999a: p. 5). For this purpose, starting in the 1960s[158] a comprehensive system of adult education and continuing training was set up, running in parallel to the mainstream educational system and mirroring the latter's levels of education (Jørgensen 2011; Statistics Denmark 2015). Within the framework of lifelong learning, the government is committed to promoting adult education as an integral part of the Danish educational system; the goal is that, even after leaving initial education,

[157] The Netherlands, Slovenia, Austria, Luxembourg, Spain and Estonia are located in the middle range. In 2009, only 5 member states met or exceeded the 2020 benchmark (Commission of the European Communities 2011).

[158] In fact, the first public policy measure in the field of Danish adult education can even be traced back to the year 1851. At that time the Parliament accepted the first act relating to financial support for the Folk high schools (Milana 2008).

everyone in Danish society (irrespective of gender, age, educational attainment, employment status[159] and so forth) should engage in skills upgrading activities (The Ministry of Education 2008; UNESCO Institute for Lifelong Learning 2009). Therefore, the public sector plays a key role in providing adult men and women with various educational opportunities, which to a high degree are financed[160] by the public purse (i.e. by the state and regional as well as local authorities) (The Danish Research and Development Centre for Adult Education 2001; Cort 2002; Dieckhoff 2007).

Given the macro-level developments referred to at the beginning, Denmark has also recently strengthened its efforts in the field of adult education and continuing training (The Ministry of Education 2008). Even in Danish society, where fertility rates are comparatively high, demographic ageing is an important issue (GHK and Research voor Beleid 2011). At a time when the large post-war generations are approaching retirement, the recruitment of young persons to the labor market is deteriorating[161] (Brems 2003). Besides, in an increasingly globalized world, Denmark's economic competitiveness and social cohesion are becoming ever more essential in ensuring the regeneration of the welfare state (Jørgensen 2007). The country's national action plan in the context of its renewed emphasis on the lifelong nature of learning ('Denmark's strategy for lifelong learning – Education and skills upgrading for all', launched in 2007) is mainly based on the government's globalization strategy 'Progress, renewal and development – Strategy for Denmark in the global economy', which was published in 2006 (Brems 2003; Green 2003; Jørgensen 2007; GHK and Research voor Beleid 2011). The overall objective is to enable Denmark to deal with the long-term challenges resulting from demographic change, globalization, and technological development; a well-qualified and highly-educated workforce, upgrading and improving their lifelong skills and competences, alongside a dynamic culture of research and innovation, are considered crucial factors for achieving this aim (Jørgensen 2007; GHK and Research voor Beleid 2011; Chłoń-Domińczak and Lis 2013).

[159] In Denmark, both employed and unemployed individuals can participate in adult education programs (CEDEFOP 2013).
[160] In 2004, total public and private expenditure for adult education and continuing training was approximately 15 billion Danish kroner (US $2.2 billion) (Jørgensen 2007).
[161] A national report on Denmark mentions that "[…] in 2008, for every 100 persons in the active labour force there are 89 persons to be provided for, i.e. persons outside the labour force" (GHK and Research voor Beleid 2011: p. 3).

Guiding question and concrete research objectives of the third empirical subsection

Considering the above, it is fair to say that – in our rapidly changing and progressively globalized, knowledge-based world – the readiness to update skills and competences throughout one's lifetime is becoming more and more indispensable, particularly in an era where workforces are ageing and working lives are being prolonged (Laal and Salamati 2012). Or, as Chłoń-Domińczak and Lis (2013: p. 1) put it, skills have become the "[…] currency of the 21st century". As a result, in Europe and beyond the need for recognized learning opportunities, accessible to men and women of all ages and from all educational backgrounds, is increasingly being acknowledged, which is why adult education occupies an important place in lifelong learning strategies today (Georgiadis and Zisimos 2010; Laal and Salamati 2012). Denmark is amongst those countries that have been offering more flexible educational environments for a longer time already, and therefore demonstrates an impressive number of citizens taking advantage of the possibilities made available by its well-established adult education and training system (Laal and Salamati 2012).

Yet, even though in the meantime later-life learning "[…] is not anymore the 'poor cousin' […]" of the education service, empirical evidence on the matter is still relatively scarce (Andersson et al. 2008: p. 2; Blossfeld et al. 2014). This applies both in general and specifically for Denmark, which due to its strong culture of continuing education is actually ideally suited to the study of the vital subject of adult learning. Furthermore, the slowly growing body of literature in this field shares one critical drawback: it mostly ignores gender issues (Leathwood and Francis 2006; Rogers 2006). How can this be consistent with the well-known fact that even initial educational pathways remain so obviously gendered (Leathwood and Francis 2006)? Furthermore, in the policy context, developing and maintaining knowledge over the whole life course through various forms of lifelong learning is frequently thought of as a measure that can not only foster employability and competitiveness, but also mitigate inequalities in skill levels (Chłoń-Domińczak and Lis 2013). Since, however, aspects of gender are fundamental to the creation of more equal and cohesive societies, it should not be forgotten to also examine how learning as an adult relates to social justice from the point of view of gender (Persico 2014: p. 28). Nevertheless, besides gender, other[162] individual-level characteristics – notably age and prior educational attainment – are of course also likely to have an influence on the probability of enrolling in adult learning (Boeren 2009). It can moreover

[162] Social origin and family formation are further examples of factors that may be of relevance for individuals' participation in adult learning (though not studied here) (Kilpi-Jakonen et al. 2014).

be expected that the private economic (and non-economic) returns from participation in later-life learning are gendered as well, whereby up to now there is generally a lack of consistent knowledge about how investing in adult learning pays off on the labor market (as well as in other, non-economic areas of life which are not considered here) (Feinstein et al. 2004; Schwerdt et al. 2011). Consequently, more research is needed to clarify participation patterns in adult learning and the gains which may arise from it from a gender perspective. Although adult learning is an integral part of life within the Danish gender-egalitarian society and both genders have, in principle, equal access opportunities, one cannot automatically assume that further education is distributed proportionally between men and women, and that they equally benefit from such activities (Radovan and Đorđević 2004). For this reason, the key question guiding the analyses within the third and final empirical subsection of my doctoral thesis is: *Does adults' participation in diverse forms of Danish adult learning*[163] *and the related labor market returns*[164] *differ by gender?*

By using longitudinal data from Danish administrative registers maintained by Statistics Denmark, employing descriptive and multivariate methods, this encompasses the pursuit of six concrete research objectives: First, to examine whether men and women exhibit divergent participation patterns in different forms of adult learning; second, to find out whether the age distribution of those participating in various types of adult learning varies by gender; third, analysing imbalances regarding males' and females' chances of participating in diverse kinds of adult learning; fourth, to investigate the effect of participation in different types of adult learning on men's and women's risk of becoming unemployed; fifth, studying the extent to which participation in distinct kinds of adult learning affects both genders' chances of leaving unemployment; sixth, to explore in how far males' and females' career mobility is influenced by their participation in various forms of adult learning.

[163] In the course of my analyses, I am using the term 'adult learning' instead of 'adult education' to refer to all learning activities as an adult – be it in connection with (formal and/or non-formal) programs provided by the Danish adult education and continuing training system, or in the form of re-entering the country's mainstream education and training system. As described by Boeren (2009), 'education' relates more to institutions and structures, while 'learning' instead denotes the process of acquiring knowledge and skills. Additionally, the former "[…] is often used with reference to learning activities that occur in formal settings only" (Kilpi-Jakonen et al. 2014: p. 4). Of course, adult learning is part of lifelong learning.

[164] Hence, due to the "[…] centrality of employment in the societies that we live in […]" I am interested in the economic, i.e. labor market-related, returns from diverse forms of adult learning (Sabates 2007; Kilpi-Jakonen et al. 2014: p. 4). However it is an undeniable fact that learning in later life also yields wider, non-economic benefits, such as improved life satisfaction, better health, or greater civic participation (Blanden et al. 2010; Aggett and Neild 2014).

Overview of the subsequent procedure

In the following, I first provide the reader with theoretical background knowledge on the structure of the Danish adult education and continuing training system (2.3.2). After that, I briefly discuss the institutions which can be expected to shape individuals' participation in and the labor market returns from adult learning in Denmark (2.3.3). Next, I describe my research objectives and the methodology applied (2.3.4). The results of the empirical analyses are presented in point 2.3.5. Finally, there is an interim summary and discussion of gender differences in adults' labor market returns deriving from participation in diverse forms of Danish adult learning (2.3.6).

2.3.2 Structure of the Danish adult education and continuing training system

Some introductory information on the Danish system of education and continuing training specifically designed for adults

Denmark, as already pointed out, possesses a long tradition of supporting and fostering adult learning, which "[…] is understood as a more or less formal provision for people who have accomplished or left the ordinary education system" (Brems 2003: p. 8). The Ministry of Education (2008: p. 31) states that the main principles of the Danish adult education and continuing training system are "[…] good and relevant opportunities for continuing and advanced training for all, adult education programmes shall be recognised at comparable levels, and good possibilities for building bridges between education programmes and education levels". Although in this sense, later-life learning may also be offered by private initiatives, as well as within corporations, the great majority of the schemes is financed by public resources and regulated by legislation[165] (Cort 2002; Brems 2003; Confederation of Danish Employers 2007). However, for a number[166] of adult education and continuing training programs, a tuition fee is charged (Cort 2002).

[165] There exists no common regulatory framework for adult education and continuing training, but almost all legislation in this regard is overseen by the Ministry of Education (Brems 2003).

[166] While in the case of non-formal adult learning programs there is an essential element of participants' own financial contribution, formal adult learning programs are mostly free of charge (or require the payment of only a moderate fee) (Brems 2003). Participants generally have the opportunity to receive public financial support to cover these costs, although today this applies principally to the formal programs of adult education and continuing training (Brems 2003).

As regards the various learning opportunities supplied within Denmark's system of education and continuing training for adults, there is a high degree of diversification[167] both in terms of educational services as well as of institutions involved, although with respect to publicly-funded adult learning (dealt with here[168]), a differentiation is mainly made between non-formal[169] and formal programs or providers, as depicted in Figure 2.16 (Milana 2008; EAEA 2011).

Non-formal adult education programs are administered by evening schools, folk high schools, as well as day folk high schools (The Ministry of Education 2008). Roughly speaking, they aim at "[…] increasing both general and specific knowledge and skills of adults in order to support their desire and ability to take responsibility for their own life as well as to actively participate in society", and are characterized by the lack of examinations (Milana 2008: p. 8; EAEA 2011).

Programs pertaining to formal adult education can be grouped in terms of whether they are vocationally oriented (comprising AMU – adult vocational training, GVU – basic adult education, VVU – further adult education, Diploma level programs, and Master level programs) or generally oriented (consisting of special education for adults, Danish as a second language for foreigners, FVU – preparatory adult education, AVU – general adult education, and HF – Higher preparatory examination program) (The Ministry of Education 2008). Their overall goal is to develop professional skills and abilities, which is why these kinds of programs conclude with a final test or examination[170] which leads to formal qualifications[171] (Brems 2003; Milana 2008; EAEA 2011). In the following section, the non-formal and formal programs of Danish adult education and continuing training mentioned here are explained in more detail.

[167] This is also true in reference to the teachers in adult education and continuing training, who comprise a mixed group of personnel with a broad range of qualifications (Brems 2003). Whereas trainers in the area of non-formal adult education must not fulfil any specific qualification requirements – and instructors of vocational formal programs are also not required to provide specific pedagogical qualifications beyond subject-specific knowledge and professional experience – teachers of general formal programs are required to have the same pedagogical qualifications as school teachers within the mainstream educational system (Milana 2008).

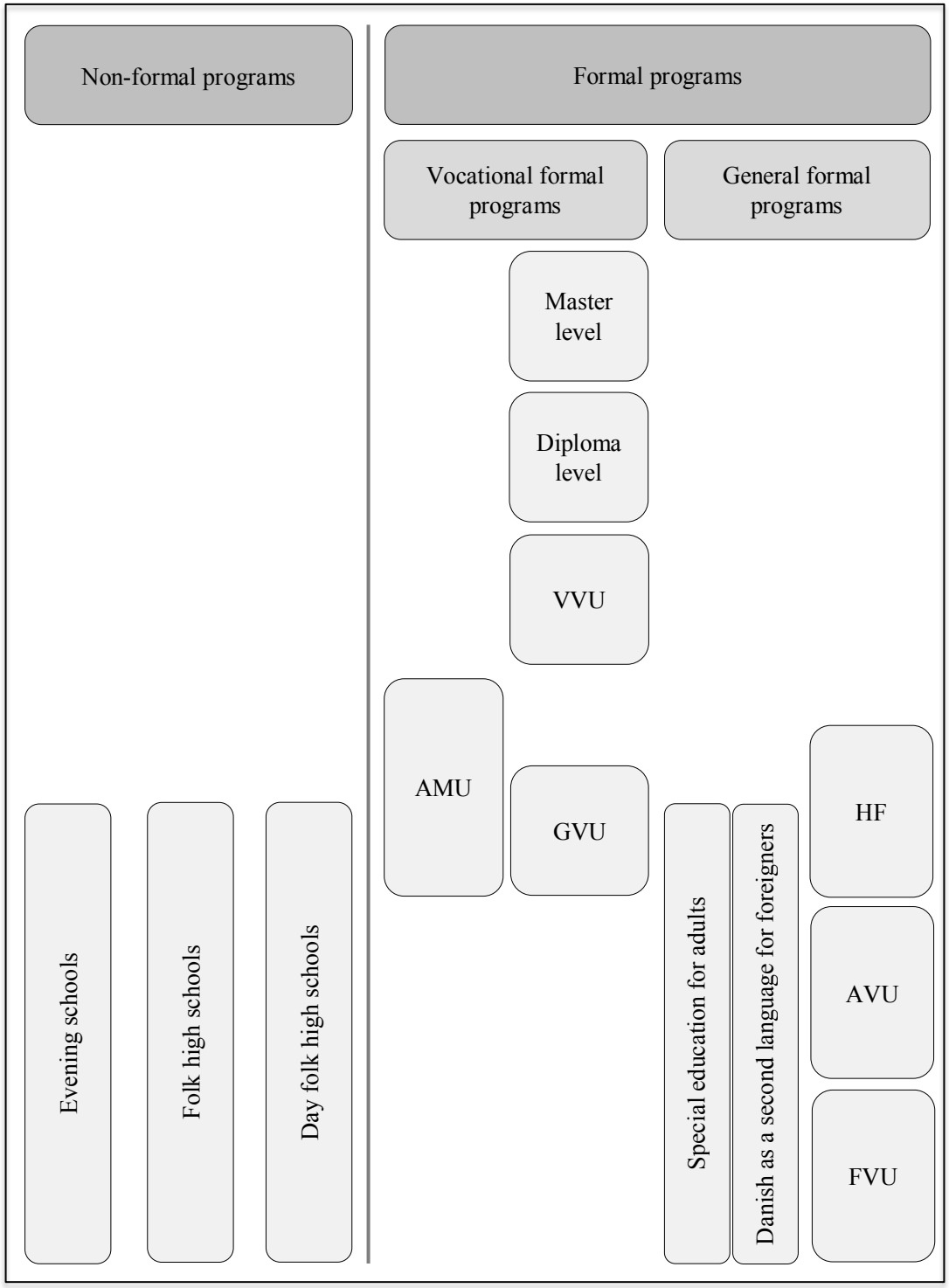
[168] Adult learning programs operated by the private sector are poorly investigated in Denmark and not covered by the present work (Brems 2003).

[169] In Denmark, non-formal adult education (also referred to as 'liberal adult education') has its roots in the 19th century's religious and social movements, and has always been accorded high significance (Duvekot et al. 2007; GHK and Research voor Beleid 2011).

[170] The final exam can be written and/or oral (OECD 1999b).

[171] The only courses not resulting in formal qualifications are special education for adults and Danish as a second language for foreigners (Danish Agency for International Education 2010).

Figure 2.16: Simplified overview of the Danish adult education and continuing training system



Source: Own illustration based on The Ministry of Education (2008: p. 12).
Note: The drawing only shows levels, not extent of activities. FVU and AVU correspond to the primary and lower secondary level in the mainstream educational system; HF, AMU, and GVU are on the level of ordinary upper secondary education; lastly, VVU, Diploma level programs, and Master level programs correspond to the three levels (short-cycle, medium-cycle, and long-cycle) in the mainstream tertiary education system. In the remaining adult learning programs, the level cannot be indicated precisely; however, as can be seen, they are usually located in the lower range (Milana 2008).

Non-formal adult learning programs provided by the Danish adult education and continuing training system

Evening schools[172] are partly subsidized by local authorities and characterized by universal access as well as free choice of initiative, subjects, and teachers (The Ministry of Education 2008). Hence, they independently offer a broad spectrum of non-qualifying educational courses with varying duration, including e.g. sports, politics, religion, or philosophy (Brems 2003; European Commission et al. 2015; EAEA 2011). The aim is "[…] to strengthen non-formal adult learning, particularly related to active citizenship and becoming actively responsible for your own life and part in society" (EAEA 2011: p. 8).

The most well-known schools operating within the framework of non-formal adult learning in Denmark are the folk high schools[173] (Danish Agency for International Education 2010). They are established as independent, non-governmental institutions, partially financed through state grants (Brems 2003; EAEA 2011). Also, the folk high schools have substantial freedom with regard to choosing the subjects as well as the content and methods of their teaching (The Ministry of Education 2008). The length of the non-qualifying courses provided[174], whose purpose is "[…] to broaden general, social and democratic competencies […]" (Danish Agency for International Education 2010: p. 11), ranges[175] from one week up to almost a year (the average duration is between four and five months) (EAEA 2011). For half of the time, the subject is of a broad, general nature; the rest of the time is then used to go into more depth on special subjects and skills (The Ministry of Education 2008). Participants must be at least 18 years old and no specific qualifications are required to gain access to the large variety of courses (concentrating for example on music and theatre, sports, politics, nutrition, or team building) (The Ministry of Education 2008; EAEA 2011; GHK and Research voor Beleid 2011). Upon successful completion of a course that lasted longer than four weeks, usually the learner receives a certificate "[…] which is not part of the qualification structure, but can be used for validating non-formal […]" learning (European Commission et al. 2015: p. 11).

[172] The approximate number of evening schools is 2,100 (The Ministry of Education 2008).
[173] There are around 90 folk high schools all over the country (Brems 2003; The Ministry of Education 2008).
[174] The courses are characterised by mutual learning taking into consideration prior experiences (EAEA 2011: p. 8)
[175] Short courses are usually provided in the summertime, while the longer courses are mostly held during the winter (Brems 2003; The Ministry of Education 2008).

Non-formal and non-qualifying adult learning is furthermore provided by day folk high schools[176], which also benefit from municipal subsidies (Brems 2003). The curriculum of each of these schools is designed individually (though most of them specialize in either practical-creative or intellectual-theoretical subjects); the common aspect is that day folk high schools mainly focus on low-skilled adults with a weak connection to the labor market, and therefore pursue the goal of providing "[…] the participants with personal competence either to carry through a formal education or to establish a permanent contact with the labour market" (Brems 2003: p. 6; European Commission et al. 2015). Courses are normally organized as full-time education and last between four and 18 weeks (Brems 2003; EAEA 2011).

Formal adult learning programs offered within the Danish system of education and continuing training for adults

Adult vocational training (AMU) is offered by labor market training centres[177], as well as vocational education and training colleges, and consists of short vocational training courses which are primarily targeted at low-skilled and skilled adult workers (over 20 years of age) on the labor market. However, both employed and unemployed[178] individuals (irrespective of their educational background) have access to the formal AMU programs, since the main entrance requirement is being resident or having a job in Denmark (Cort 2002; The Ministry of Education 2008; CEDEFOP 2012). As already mentioned, the courses are generally of a relatively short-term nature, ranging from half a day to six weeks (lasting on average one week) (EAEA 2011; CEDEFOP 2012). Though adult vocational training includes, besides general education, a considerable share of practical experience, it is not organized as alternance training (Cort 2002). AMU programs "[…] can be held as traditional classroom teaching, in open workshops, as distance learning or at the workplace; over several consecutive days, spread over a longer period or as evening classes" (CEDEFOP 2012: p. 41). In total, there are around 2,000[179]

[176] All in all, there exist approximately 90 day folk high schools (Brems 2003). "In order to be approved as day folk high school the school must offer at least one course with a duration of 12 weeks and must have at least 12 students full-time equivalent (corresponding to 12 students participating in 40 weeks of education)" (Brems 2003: p. 20).
[177] There are around 24 labor market training centres (Cort 2002).
[178] Some AMU courses are specifically developed for "[…] groups at risk of being marginalized in the labour market […]", including for example long-term unemployed persons, refugees, or immigrants (The Ministry of Education 2002: p. 4; CEDFOP 2012).
[179] Each year about 200 new AMU courses are developed, while existing courses which – with regard to current labor market requirements – are no longer up to date may be canceled (CEDEFOP 2012). Thus, adult vocational training is "[…] a flexible system, responsive to changing demand for different skills and competences within the labour market" (CEDEFOP 2012: p. 40).

different AMU courses, covering a variety of sectors and trades such as hotel and catering, construction, agriculture and dairy farming, or service industries (Cort 2002). These can be divided into three broad categories: Specific competences (e.g. crafts, knowledge of materials), general competences (e.g. working environment, IT), and personal competences (e.g. responsibility, communication skills) (The Ministry of Education 2002; CEDEFOP 2012). After an assessment of prior learning, each attendee obtains an individual training plan which states the concrete objectives to be achieved (CEDEFOP 2012). Nevertheless, the overall goal of adult vocational training is to "[…] provide participants with skills and competences applicable in the labour market and primarily directed towards specific sectors and job functions. The programmes may either deepen the participant's existing knowledge in a particular field, or broaden it to related fields" (CEDEFOP 2012: p. 39). Once an AMU program has been completed successfully by passing the final exam, the learners receive a certificate which formally qualifies them for the relevant work tasks and is recognized on the national labor market (Brems 2003; The Ministry of Education 2008).

Labor market training centres and vocational education and training colleges also deliver basic adult education (GVU) (OECD 1999b; Milana 2008). These kinds of formal programs give low-skilled adults who possess labor market experience, but no corresponding formal attainments, the opportunity to supplement their previous competences in order to obtain[180] a full vocational qualification (equivalent to the certificate from mainstream vocational upper secondary education and training) within a specific trade, e.g. retail or logistics (Milana 2008; CEDEFOP 2012; CEDEFOP 2013). Entrance conditions entail that the participant is not less than 25 years old, has at minimum two years of relevant work experience, and has at least completed the 9th class of compulsory schooling (The Danish Ministry of Education 2010; GHK and Research voor Beleid 2011). Before starting a GVU course the learner goes through competence assessment; based on the recognition of prior skills, the school then draws up a tailor-made education and training plan which is normally followed part-time alongside the attendee's job (Cort 2002; GHK and Research voor Beleid 2011). Thus, while adults also have full access to vocational upper secondary education and training within the ordinary educational system, the advantage of basic adult education is that if offers greater flexibility, since the personal education and training plan – which remains valid for up to six years – is specifically geared towards individual needs and can be pursued without

[180] Adults completing a GVU program take the same final examination as students in ordinary vocational upper secondary education and training (CEDEFOP 2012).

having to cease work (Cort 2002; The Ministry of Education 2008; CEDEFOP 2012). Yet it should be noted that GVU is not structured as alternating programs (albeit a period of practical training can be a component of basic adult education), and that the participants do not enter into an apprenticeship contract with a company (Cort 2002; CEDEFOP 2013).

Although adults are additionally entitled to fully access the mainstream tertiary education system, there also exists a parallel system at tertiary level with special focus on adult learners' needs (for example by providing courses on a part-time basis or mostly during weekends in order to allow for ongoing employment) (CEDEFOP 2012). These tertiary-level, vocationally-oriented formal adult learning courses, whose general aim is to further develop job competences, can be found at the same three stages as the tertiary programs available within the ordinary educational system, although the former lead to comparable, but not exactly identical qualifications (The Ministry of Education 2008; GHK and Research voor Beleid 2011). Advanced levels of vocational formal programs include: Further adult education[181] (VVU – administered by vocational education and training colleges; similar to short-cycle academy profession programs in the mainstream system), Diploma level programs (offered by university colleges; corresponding to medium-cycle professional bachelor programs in the ordinary system), and Master level programs (delivered by universities; comparable to long-cycle master programs in the initial system) (Milana 2008; The Ministry of Education 2008; GHK and Research voor Beleid 2011).

Special education for adults – like all the subsequently described schemes – is part of the generally-oriented formal adult education programs, and can be attended at adult education centers[182] (EAEA 2011). It is designed for "[…] individuals who, due to a physical or psychological handicap, are in need for pedagogical support in order to bettering their everyday life conditions" (Milana 2008: p. 6). An important element of special education for adults is the tuition of dyslexics, individuals with "[…] difficulties in the basic acquisition of written information as well as in expressing themselves in written form" (Brems 2003; Milana 2008: p. 6).

[181] There are a total of 20 VVU programs, covering areas such as retail, international transport and logistics, or information technology. These programs require between two and three years of relevant professional experience. VVU qualifications ultimately permit access to relevant professional bachelor programs (CEDEFOP 2012).
[182] In Denmark there are about 29 adult education centers (The Ministry of Education 2008).

Language centers[183] are responsible for the teaching of Danish as a second language for foreigners. The latter forms a major part of an integration program which is offered to all adult immigrants with the right to stay in the country, and consists of language teaching at different levels as well as information about Danish culture and society. In order to obtain a permanent residence permit in Denmark, the course (and exams) must be completed, which then qualifies participants formally to enter the mainstream education and training system (Brems 2003).

Preparatory adult education (FVU) is established at adult education centers (the same applies to both AVU and HF courses) (OECD 1999b; EAEA 2011). FVU serves the purpose of improving basic skills in reading, writing, and mathematics so that mature learners of at least 18 years of age are better equipped to cope with the demands of professional life. In addition, preparatory adult education aims to prepare adults for further education and training, as well as to strengthen their civic participation in a democratic society (EAEA 2011; European Commission et al. 2015). The primary driver behind these formal services is the notion that there is a relatively large group of (low-skilled) people who are struggling to meet the increasing requirements of globalized markets (The Ministry of Education 2008; EAEA 2011). Apart from the age limit, no specific qualification criteria determine participation in FVU (Milana 2008). The programs, which are organized on a modular basis, involve between 120 and 240 hours of study and may be finished with an exam (Brems 2003; European Commission et al. 2015).

General adult education (AVU) is provided as single subject courses (e.g. Danish, foreign languages, mathematics, or science) on lower secondary level; most of these standard school subjects comprise 60 hours of tuition and are divided into three degrees of difficulty (each consisting of two modules) (Brems 2003; European Commission et al. 2015). The target group of the formal AVU programs is individuals aged 18 and above who have not finished compulsory schooling, or who wish to complement their basic education and acquire general knowledge relevant to working life (GHK and Research voor Beleid 2011; European Commission et al. 2015). General adult education concludes with a final examination, qualifying the holder for continued education and training (Brems 2003; European Commission et al. 2015).

[183] The number of language centers is approximately 50 (Brems 2003).

Finally, the higher preparatory examination programs (HF) are also structured as a 'single-subject system'; however, in this case the standard school subjects taught correspond to the level of (general) upper secondary studies (Brems 2003). The formal courses, which are furthermore supplied by upper secondary schools, are basically identical to the ones in initial general upper secondary education (The Ministry of Education 2008). All qualified young and older people are allowed to access the full-time, two-year HF programs, whose ambition it is "[…] to increase the chances for adults to engage in further education and / or to (re)enter the labour market" (Milana 2008: p. 7; The Ministry of Education 2008). The leaving exam enables entry into tertiary-level education (Brems 2003).

The mainstream education and training system also 'keeps the door open' for adults

Besides the previously described educational services available within the adult education and continuing training system, the ordinary education and training system (outlined in point 2.1.3) also keeps an open door for adult learners who want to re-enter at a later time (Skovsgaard 2009). As a consequence of this flexibility, "[…] many 'adults' can be found in 'youth education' programmes, and many young people under the age of 30 find themselves in either the adult education system or the adult job training system. The boundary between a young person and an adult is by no means clear, even though some programmes have formal, although often overlapping, age requirements" (OECD 1999b: p. 20).

In conclusion, it can thus be established that Denmark's overall educational system is comprised of two parts: The first part constitutes the mainstream educational system, primarily, but not exclusively, directed towards children and young persons, while the second part represents the parallel educational system, principally focused on adults and specifically designed for mature learners whether they be employed or unemployed (Plougmann and Madsen 2002; Aagaard 2015). Taken together, these two types of Danish educational systems provide the framework for lifelong learning (Cort 2002; Plougmann and Madsen 2002). In 2001 the parliament adopted a number of acts reforming the publicly-funded adult education and continuing training system, in particular with the goal of creating a more coherent and transparent system[184] of adult learning in which the various programs are structured in such a way that they can be more

[184] Figure 2.16 shows the current institutional shape of Denmark's adult education and continuing training system.

easily compared[185] to the levels in ordinary education (Milana 2008; EAEA 2011). Furthermore, the reform package stipulated a better utilization of financial resources, which led to an increase in contributions from participants and employers, as well as to a prioritization of learning activities resulting in a formal[186] qualification (Brems 2003; EAEA 2011; GHK and Research voor Beleid 2011).

Following the presentation of Denmark's comprehensive adult education and continuing training system, and before outlining the research interests and methodology of this subsection, I would like to discuss the national institutions which may govern both Danish citizens' engagement in, and the labor market benefits of, later-life learning activities. Since the subsequently mentioned institutions have already been extensively described in the preceding parts of the present work (see points 1.3, 2.1.2, 2.1.3, 2.2.2, and 2.3.2), I will keep my comments fairly brief.

2.3.3 Institutions shaping individuals' participation in and the labor market returns from adult learning in Denmark

The relevance of the Danish welfare regime, educational system, and employment system for adult learning patterns and outcomes at the level of the individual

As argued by Kilpi-Jakonen et al. (2014), it is vital to recognize that besides personal characteristics (notably gender, age, and prior education) country's specific institutional settings are also relevant for adult learning patterns and outcomes on the individual level (see Figure 2.17). This is due to the fact that the previously specified macro-level processes of globalization and population aging – which contribute to an increasing need to refresh citizens' skills throughout their entire life span – are filtered through modern societies' national institutions. Therefore, I will now briefly discuss the role of the following institutions in affecting individuals' involvement in and the labor market returns from adult learning in Denmark: The welfare regime, the educational system, and the employment system (Kilpi-Jakonen et al. 2014).

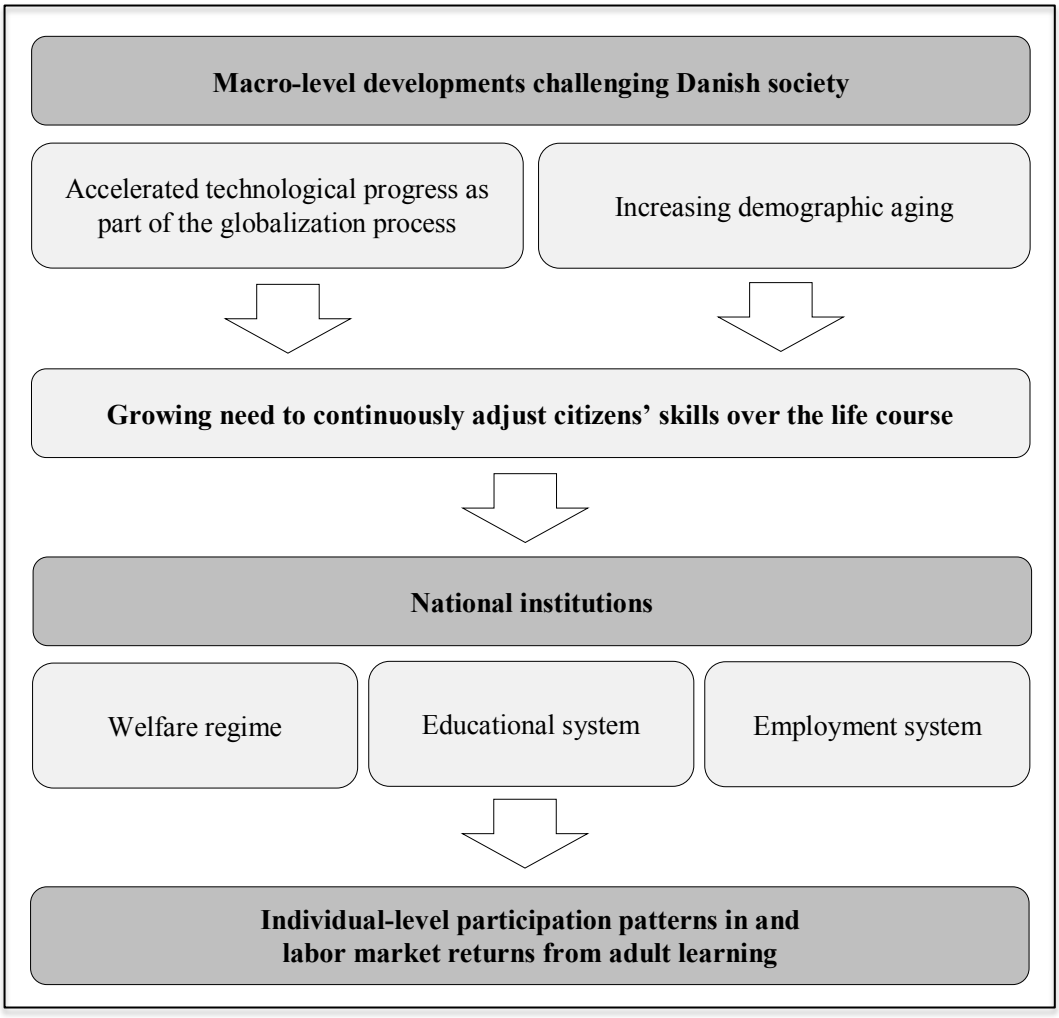
First of all, countries differ with regard to the organization of their lifelong learning systems; specifically, how responsibilities are shared between the welfare state, the market (including employers), and civil society (Georgiadis and Zisimos 2010; Kilpi-

[185] Aagaard (2015) notes that although the parallel adult education and continuing training system, to a great extent, covers similar types of teaching and learning as in the mainstream educational system, there are also some specific adult learning programs (for instance, VVU as well as Diploma level programs) that only exist in the field of adult education.

[186] Hence, at least with regard to public subsidies in the context of this reform non-formal adult learning programs were downgraded (Brems 2003).

Jakonen et al. 2014). Dieckhoff (2007: p. 297) argues that this can "[…] be explained by differences in the welfare state set-up. A social democratic welfare state built on an egalitarian and universalistic welfare ethos (Esping-Andersen, 1990) and strong emphasis on 'employment-sustaining labour market policies' (DiPrete et al., 1997: 323), as found in Denmark, is more likely to assume responsibility for providing its citizens with life-long learning opportunities than a conservative welfare state (Esping-Andersen, 1990) with 'welfare sustaining employment exit policies' (DiPrete et al., 1997: 323), as found in Germany". Since "[…] there tends to be a market failure in adult learning whereby individuals and firms do not invest in it to a socially optimal extent", state provision and support of recognized later-life learning is important for the participation level of the population as a whole as well as for the participation of certain, more vulnerable subgroups (e.g. women or the unemployed) (Kilpi-Jakonen et al. 2014: p. 16).

Figure 2.17: Adult learning in Denmark and the role of national institutions



Source: Own illustration based on Kilpi-Jakonen et al. (2014: p. 13).

As already highlighted, within the Danish social democratic welfare regime, the state represents the main institution that implements educational services for adult learners. Underlining the 'public good' model, Danish authorities traditionally assign a high value to state-financed adult education and continuing training, which plays a significant role in realizing the country's active labor market policies (OECD 1999a; Milana 2008; UNESCO Institute for Lifelong Learning 2009). However, owing to the "[…] ethos of the Nordic welfare regimes to ensure employability […]" (Kilpi-Jakonen et al. 2014: p. 17) as well as social inclusion and active citizenship, in Denmark, adult learning is intended for both the unemployed and the active labor force (Chłoń-Domińczak and Lis 2013). Hence, employees also have the chance to engage in (re-)training outside the workplace, and are consequently less dependent on courses directly offered by their employers (Kilpi-Jakonen et al. 2014). According to national legislation, "[…] adult education has an obligation to take into consideration the needs and experience of the adult participants; therefore, having a job and the ability to study must be possible at the same time" (Aagaard 2015: p. 5). In this context it should moreover be noted that particularly women's opportunities to profit from the participation in adult learning activities are influenced by public policies that help parents to be able to combine work and family life, as is the case in Denmark with its extensive, institutionalized early childhood education and care system (Kilpi-Jakonen et al. 2014).

The prevalence of adult learning, both within countries and certain social groups, is furthermore influenced by the degree of educational system stratification at upper secondary level, i.e. whether the main focus is on occupational specificity (e.g. Denmark and Germany) or on more general education (e.g. the USA and Finland). On the one hand, it has been found that in comprehensive school systems, where upper secondary education is characterized by a strong common basis of knowledge and a relatively high amount of general education, graduates need less training to be equipped for meeting the requirements of technological progress. On the other hand, however, less specialization and a weak emphasis on work-based training may also cause a greater demand for adult learning after leaving initial education. Another relevant feature of formal educational institutions is their openness to mature learners, affecting not only engagement in, but also the labor market returns deriving from, learning in adulthood (Kilpi-Jakonen et al. 2014). As claimed by Kilpi-Jakonen et al. (2014: p. 15), "[…] more-open educational systems – i.e., those that allow for greater participation of mature students in educational types normally reserved for young persons [like in Denmark, author's note] – also reward older graduates to a greater extent than more-closed systems. One of the reasons behind

this could be that participation in open systems is less 'scarring' for adults than is the case when adult participation is very rare, as it is in closed systems". In more general terms, the overall level of education of the working-age population may also have an effect on adult learning taking place. Denmark is among those countries with high shares of tertiary-educated citizens, and although it might be assumed that lower levels of educational attainment result in a greater need for later-life learning, international research has shown that more highly-educated individuals tend to participate to a larger extent[187] in such activities (known as the 'Matthew effect' or as cumulative advantage) (Kilpi-Jakonen et al. 2014).

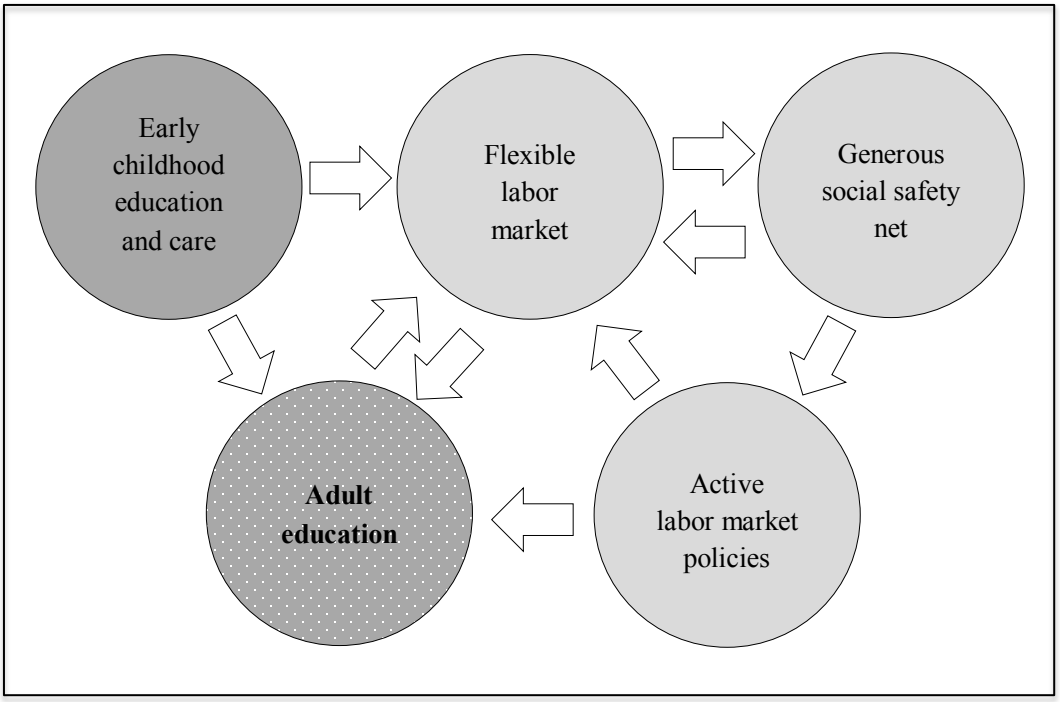
Finally, the employment system is also an institutional factor that is directly involved in determining pervasiveness of adult learning in a society. Because of the low level of protection for workers against dismissal, the Danish labor market displays a comparatively high degree of flexibility, as becomes apparent when looking at the considerable amount of job turnover and employee turnover (both within and between employers) (Confederation of Danish Employers 2007; Obadić 2009; Kilpi-Jakonen et al. 2014). Accordingly, employment relationships tend to be of shorter duration, which means that employers are probably less interested in continuously enhancing their workers' skills and in assigning company-funded learning opportunities relatively equitably[188]. This leads to a situation in which employment risks and chances are more or less evenly distributed across the whole workforce, but where there is also a constant testing of the workforce's productivity (Madsen 2002; Kilpi-Jakonen et al. 2014). Hence, in order to be successful in the labor market, it is crucial for male and female workers to invest in their human capital and to ensure that their skills are in tune with employers' current and future needs (Confederation of Danish Employers 2007; Kilpi-Jakonen et al. 2014). The Danish adult education and continuing training system is of particular importance in this respect, which is why Madsen et al. (2010) even suggest adding it as a further element to the 'golden triangle' of flexicurity (Hofäcker 2010). When moreover extending Denmark's labor market model with the state's comprehensive early childhood education and care provision – as proposed by Hansen (2007) (see point 2.2.2) – a five-

[187] This may be due to the fact that better-educated individuals exhibit better learning capabilities, have the necessary entry qualifications needed for certain types of adult learning, and also will often "[…] work in more-demanding and knowledge-intensive occupations, which require more training (OECD 2013)" (Kilpi-Jakonen et al. 2014: p. 8). On the other hand, it should not be forgotten that persons in good labor market positions face greater opportunity costs of further learning (Kilpi-Jakonen et al. 2014).

[188] There is a general tendency for employers to primarily invest in the continuing training of employees that they consider to be more productive (Kilpi-Jakonen et al. 2014).

pillar system arises: consisting of a flexible labor market, generous social security benefits, active labor market policies, early childhood education and care services, as well as adult education and continuing training programs. An illustration[189] of the enlarged version of the Danish 'golden triangle' of flexicurity is provided in Figure 2.18 below.

Figure 2.18: Extended version of the Danish 'golden triangle' of flexicurity



Source: Own illustration based on Madsen et al. (2010: p. 5).

2.3.4 Research objectives and methodology

Concrete research objectives of my empirical analyses

In light of the previous theoretical considerations, it seems that the Danish welfare society is well equipped for meeting the challenges arising from the macro-level processes of globalization and population aging. This is primarily a result of the country's long-lasting tradition of providing educational opportunities for mature learners – be it within the adult education and continuing training system or within mainstream schooling. Although these options are, in principle, open to all citizens and it is known that in Denmark the overall attendance rate in such activities is exceptionally high, more detailed information on participation patterns according to gender (and further influencing characteristics at the level of the individual, notably age and prior education) is largely lacking.

[189] In this case, too, the arrows stand for the streams of persons running between the different positions (Madsen et al. 2010).

Furthermore, despite adult learning being strongly promoted in today's modern societies, the evidence base regarding males' and females' labor market benefits gained from later-life learning is rather limited and by no means clear (Feinstein et al. 2004; Schwerdt et al. 2011).

In answering the guiding question of subsection 2.3, asking if adults' participation in diverse forms of Danish adult learning and the related labor market returns differ by gender, I aspire to fill these gaps in prior research. In concrete, the empirical analyses within this part of my work pursue the following six specific research objectives:

1. Do men and women exhibit divergent participation patterns in different forms of adult learning?
2. Does the age distribution of those participating in various types of adult learning vary by gender?
3. Is there an imbalance regarding males' and females' chances to participate in diverse kinds of adult learning?
4. Which effect does participating in different types of adult learning have on men's and women's risk of becoming unemployed?
5. To what extent does participation in distinct kinds of adult learning affect both genders' chances of leaving unemployment?
6. In how far is males' and females' (upward and downward) career mobility influenced by their participation in various forms of adult learning?

Methodology

To investigate my research interests, I rely on various sources of population-based Danish administrative data, including the 'Integrated Database for Labour Market Research'. The data, gathered once a year from 1980 onwards, is stored by Statistics Denmark and ideally suited to performing longitudinal analyses of individuals' educational as well as employment histories and career paths (a detailed overview of the underlying databases can be found in subsection 1.5).

In my study, adult learning is understood as participation in the adult education and continuing training system specifically designed for adults (comprising formal and non-formal adult learning programs[190]), as well as a return to the mainstream education and training system (providing mainstream educational programs) after labor market entry.

[190] Consequently, I do not distinguish whether the formal adult learning program attended is vocationally or generally oriented.

While adult learning can certainly also take place informally, denoting the natural, self-directed accumulation of knowledge and skills during everyday life which is not organized[191] by a learning provider, I had to exclude this form of learning since it is very difficult to operationalize (Boeren 2009; Boeren 2011; Blanden et al. 2012; Kilpi-Jakonen et al. 2014). I thus observe whether the persons in my sample have attended the subsequent types of adult learning: 1) Any kind of adult learning (defined as participating in at least one of the following listed kinds of adult learning), 2) formal adult learning, 3) non-formal adult learning, 4) vocational upper secondary education and training, 5) general upper secondary education, and 6) tertiary education.

Since a larger proportion of the population entered the labor market before the beginning of the consulted databases in 1980, when defining the risk set, I make different sample restrictions for the older (born 1955-64) and younger cohorts (born 1965-80). Thus, for the older cohorts I use all full episodes between 1980 and 2009 (and left-censored activities that began before 1980 are excluded from the sample), while for the younger cohorts I use information from the time when they initially finished mainstream education and training (which means that the first uninterrupted educational episode has ended). The basic analysis sample hence comprises a total of 1,949,781 individuals[192].

As research methods I apply descriptive analyses[193] in terms of the first and the second research objective, and multivariate methods for the remaining four research objectives. When descriptively examining male and female participants' age structure in diverse types of adult learning (my second research interest) the following three age groups are established: 1) 25 years or younger, 2) 26-40 years old, and 3) 41 years or older. To study the chances of entering adult learning, addressed by the third research objective, I use multivariate models in which I not only control[194] for persons' gender, but also for their originally achieved educational degree. The latter is regarded as another key factor that shapes engagement in later-life learning; moreover, taking account of individuals' prior education enables me to assess whether adult learning has the potential to reduce social inequalities related to skills over the life course. Here, I distinguish between 1) no educational qualification, 2) compulsory education, 3) vocational upper secondary

[191] In a report of the Commission of the European Communities (2011: p. 90), this is described as the "[…] inherent unstructured nature of informal learning".
[192] 977,612 of the individuals in my basic analysis sample are male and 972,169 are female (see also Appendix H).
[193] For this purpose I created a corresponding cross-sectional dataset, on the basis of which I performed frequency analyses and calculated cross tables.
[194] Though for reasons of clearness the effects are not displayed, I additionally control for birth cohort and migrant status.

education and training, 4) general upper secondary education, and 5) tertiary education. The baseline level of education is always compulsory education.

In the course of research objectives number 4, 5, and 6, which focus on the labor market returns (i.e. risks of unemployment, chances of exiting unemployment, and career mobility) resulting from participation in different forms of adult learning in Denmark, I adopt multivariate event history methods by carrying out logistic regression models. When considering labor market outcomes in the form of employment stability (i.e. unemployment risks and chances of leaving unemployment), the point of reference is (entering or exiting) full-year unemployment. For the investigation of males' and females' direct career mobility, I look at significant gains and losses in salary[195] as measured by inflation-adjusted gross wages. An annual income increase of at least 10 percent is classified as upward career mobility, whereas a loss of income of 5 percent or more denotes downward career mobility. It should be further mentioned that, regarding the labor market outcomes of adult learning, I basically run separate models for men and women to take gendered career trajectories into account. The corresponding longitudinal analyses are realized in the following manner: In the first model, the impact of attending various types of adult learning on the three kinds of labor market returns under study is calculated. In the second model, for the reasons outlined above I additionally include[196] individuals' initial level of education. With the objective of determining if a vulnerable labor market position in one year significantly increases individuals' risk of becoming (full-year) unemployed in the next year, in my analyses on the risks of becoming (full-year) unemployed furthermore the effect of part-year unemployment is shown.

The subsequent presentation of the descriptive and multivariate findings is structured on the basis of the six previously outlined research objectives, thus covering the following themes: Participation patterns in different forms of adult learning; participants' age distribution in various types of adult learning; chances of participating in diverse kinds of adult learning; returns from participation in different types of adult learning as regards the risk of becoming unemployed; returns from participation in distinct kinds of adult learning in terms of the chance to leave unemployment, and finally returns from participation in various forms of adult learning in respect of upward and downward career mobility.

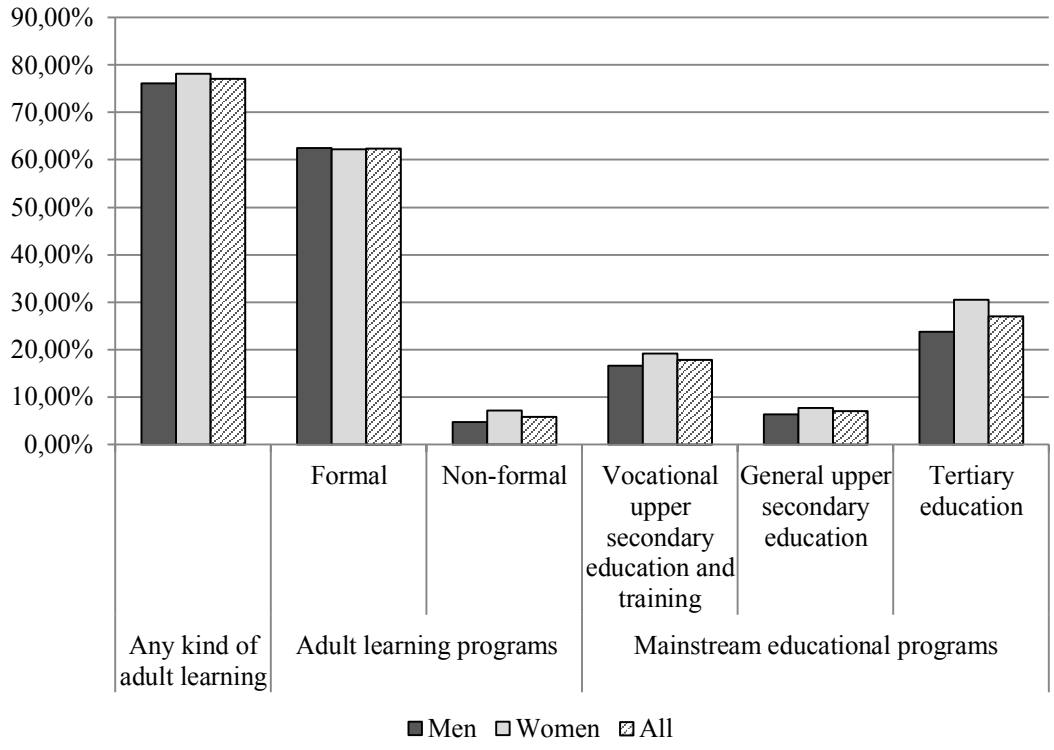
[195] According to Crichton and Dixon (2011: p. 1) "[…] an increase in wages provides the clearest evidence that skills have been gained that are valued in the labor market".
[196] I also control for birth cohort, age, age squared, and migrant status, although for the sake of clarity these effects are not presented.

2.3.5 Results of the empirical analyses

Participation patterns in different forms of adult learning

Addressing the first research objective, Figure 2.19 shows the descriptive results for males' and females' participation patterns in different forms of adult learning. As can be seen, the majority of men (around 76 percent) and women (around 78 percent) in my sample have attended some kind of adult learning after labor market entry (amounting altogether to about 77 percent). A closer look reveals that formal adult learning programs represent the most common learning activity among both genders, whereas non-formal adult learning is in general of low importance (though attended by slightly more women than men). The figure also demonstrates that Danish individuals often upgrade their initial level of education by re-entering mainstream education and training after some time on the labor market. In this regard, returning to tertiary education occurs most frequently – especially among females (30.48 percent vs. 23.73 percent). A smaller percentage of men and women participated in vocational (16.57 percent vs. 19.19 percent) and general upper secondary education (6.34 percent vs. 7.73 percent).

Figure 2.19: Men's and women's participation patterns in different forms of adult learning (results as percentages; N = 1,949,781)



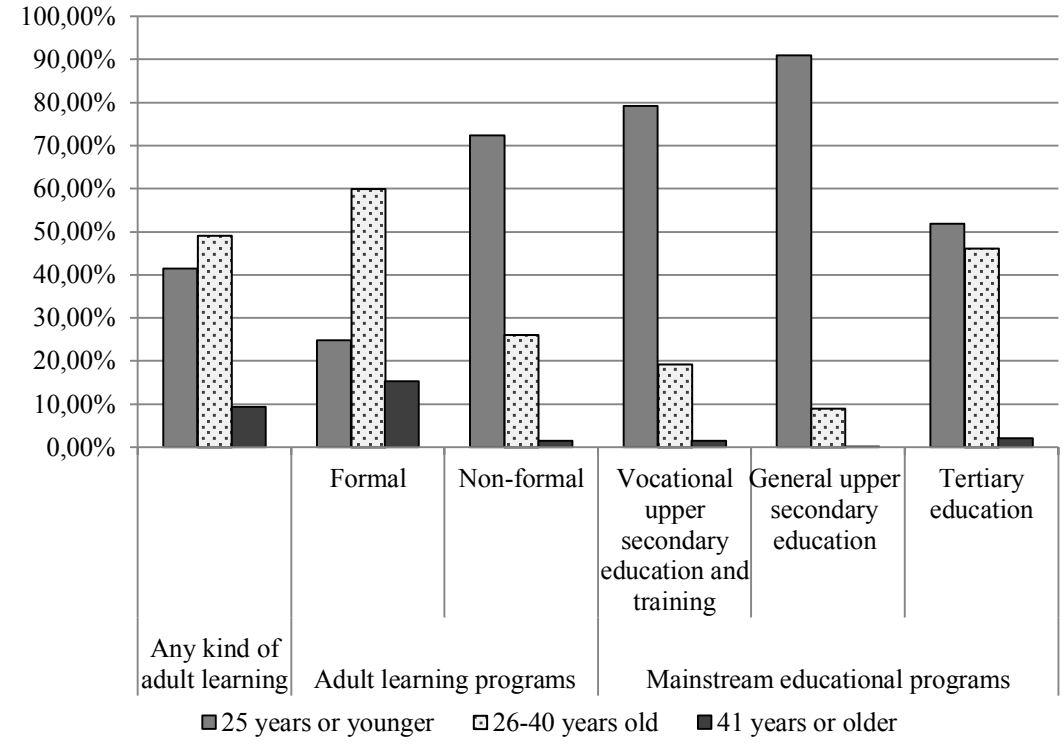
Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2014: p. 232).

Note: Figure 2.15 displays individuals who re-entered education at least once in their lives after labor market entry. Individuals may have entered more than one type of adult learning after their labor market entry and they may have participated in programs more than once.

Participants' age distribution in various types of adult learning

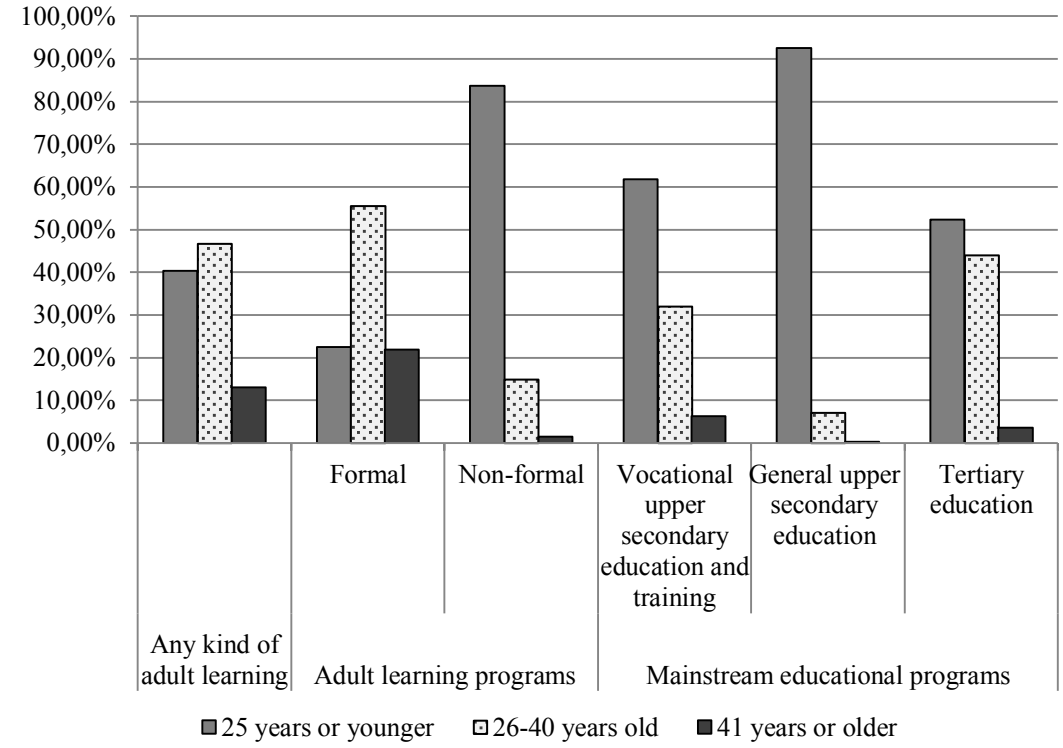
The following Figures 2.20, 2.21, and 2.22 relate to the second research interest, descriptively presenting male, female, and finally all participants' age distribution in various types of adult learning. Even though later-life learning is widespread in Denmark, the figures indicate that both men's and women's engagement in such activities is clearly dependent on their age, with persons older than 40 years exhibiting particularly low participation rates in adult learning. In general it can be stated that adult learning is mostly pursued by those aged between 26 and 40. However, closer examination shows that this results from middle-aged males' (59.92 percent) and females' (55.57 percent) overrepresentation among formal adult learning opportunities, which constitute the dominant form of adult learning in Denmark (see Figure 2.19).

Figure 2.20: Male participants' age distribution in various types of adult learning (results as percentages; N = 744,200)



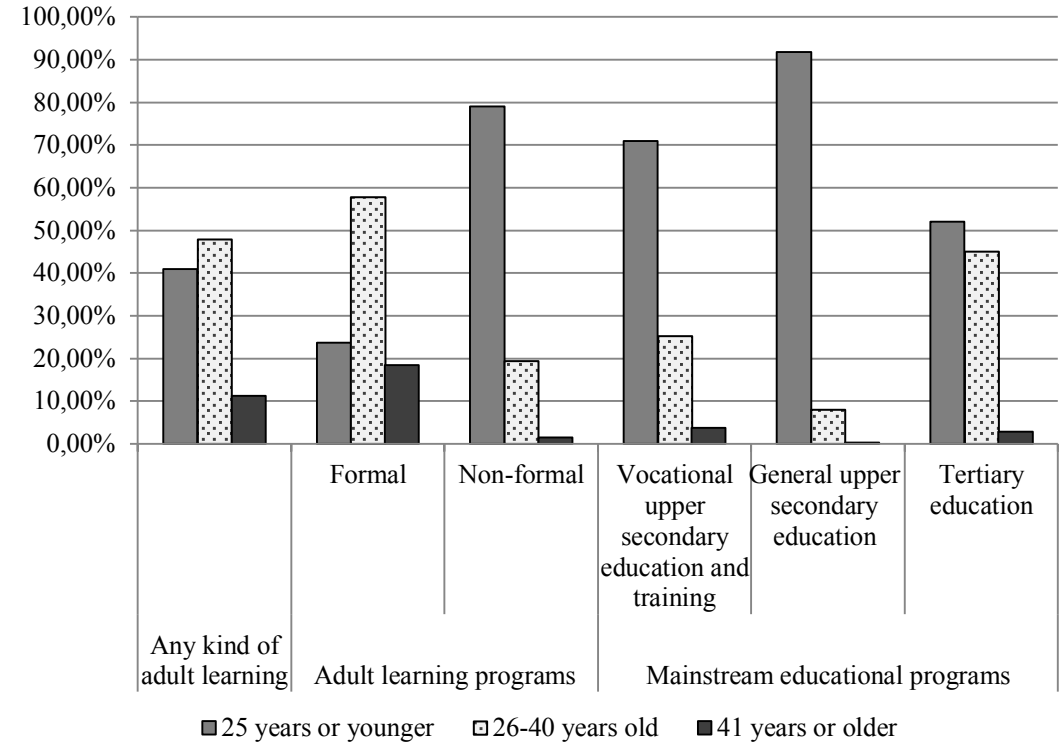
Source: Own calculations based on population register data maintained by Statistics Denmark.

Figure 2.21: Female participants' age distribution in various types of adult learning (results as percentages; N = 759,930)



Source: Own calculations based on population register data maintained by Statistics Denmark.

Figure 2.22: All participants' age distribution in various types of adult learning (results as percentages; N = 1,504,130)



Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2014: p. 233).

In contrast to formal programs, non-formal adult learning programs, as well as all kinds of mainstream educational programs (especially those offered within general upper secondary education), are most frequently attended by men and women not older than 25 years. Moreover, it may be noted that non-formal adult learning attracts more young women than young men (around 84 percent vs. around 72 percent), whereas the opposite applies in terms of vocational upper secondary education and training (around 62 percent vs. around 79 percent).

Chances of participating in diverse kinds of adult learning

After this descriptive overview, Table 2.7 turns toward the third research objective and displays the findings of the multivariate analyses, predicting chances of participating in adult learning in general as well as in diverse kinds of adult learning activities after labor market entry. When first investigating gender imbalances, it appears that women are signficantly more likely to undertake later-life learning than their male counterparts, delineating a gendered engagement in adult learning. As regards the influence of an individuals' initial educational level on the probability of attending adult learning, I find that, when compared to those who only finished compulsory primary and lower secondary education, all other educational groups exhibit poorer participation chances. However, there is one exception, namely persons with a general upper secondary qualification, who demonstrate a greater likelihood than the reference category of pursuing adult learning in general and, more specifically, of taking part in non-formal adult learning programs and tertiary degree programs. It is worthy of mention here, however, that the opportunity of attending (certain) courses within mainstream education is dependent on a person's original level of education (for example, a general upper secondary degree is the prerequisite for entering tertiary education). Since I observe all later educational activities of the individuals in my sample, it is nevertheless possible that persons with lower qualifications at the time of labor market entry also gain access to tertiary-level education afterwards (e.g., individuals with no more than compulsory education could attain a general upper secondary degree first and engage in tertiary education afterwards).

Table 2.7: Logistic regression models predicting chances of participating in diverse kinds of adult learning (results as coefficients; N = 1,949,781)

	Any kind of adult learning	Formal adult learning	Non-formal adult learning	Tertiary ed.	Vocational upper sec. ed. and training	General upper sec. ed.
Gender (ref. Male)						
Female	0.02**	0.01*	0.34**	0.15**	0.13**	0.16**
Educational level (ref. Compulsory education)						
No ed. qual.	-0.75**	-0.20**	-0.31**	-1.64**	-1.18**	-1.73**
Vocational upper sec. ed. and training	-0.81**	-0.19**	-1.07**	-0.48**	-2.02**	-1.99**
General upper sec. ed.	0.64**	-0.71**	0.43**	2.34**	-1.23**	-1.00**
Tertiary ed.	-1.76**	-1.19**	-1.73**	-0.36**	-3.39**	-3.61**
Constant	0.58**	0.15**	-4.37**	-3.06**	-1.82**	-2.87**
Log likelihood	-771041.86	-1115484.70	-396372.79	-825027.50	-760871.13	-435600.45

Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2014: p. 234).
Notes: **p < 0.01. *p < 0.05. +p < 0.10.

Returns from participation in different types of adult learning as regards the risk of becoming unemployed

Looking at the fourth research objective – and thus coming to the examination of the labor market returns from different types of adult learning in Denmark by applying the techniques of event history analysis – Table 2.8 depicts the results of the logistic regression models predicting the risk of unemployment. As the table reveals, both men and women who have been part-year unemployed (meaning that a person was employed for less than half of the year) face an increased risk of becoming full-year unemployed in the following year. Or, to put it another way: Obviously, being part-year unemployed paves the way to full-year unemployment and thus to being completely excluded from employment. Next, my findings show that – with the exception of non-formal adult learning programs – all kinds of learning activities in later life considerably reduce the risk of unemployment, and that this is true for both genders. Regarding individuals' initial level of education, it becomes apparent that males and females with no educational qualification or only compulsory education are most vulnerable to unemployment. Conversely, a lower risk of experiencing unemployment can be observed for all other educational levels.

Table 2.8: Logistic regression models predicting the risk of unemployment (results as coefficients; N (men) = 913,203; N (women) = 897,954)

	Men		Women	
	Model 1	Model 2	Model 1	Model 2
Part-year unemployment	1.42**	1.37**	1.10**	1.02**
Adult learning				
Formal adult learning	-0.39**	-0.40**	-0.18**	-0.25**
Non-formal adult learning	0.29	0.31	-0.29+	-0.18
Tertiary ed.	-0.40**	-0.25**	-1.38**	-1.04**
Vocational upper sec. ed. and training	-0.58**	-0.84**	-0.47**	-0.72**
General upper sec. ed.	-1.42**	-1.47**	-0.88**	-1.09**
Educational level (ref. Compulsory education)				
No ed. qual.		0.35**		0.30**
Vocational upper sec. ed. and training		-0.73**		-0.88**
General upper sec. ed.		-0.44**		-1.03**
Tertiary ed.		-1.14**		-1.96**
Events	5,679	5,679	6,198	6,198
Total episodes	1,680,882	1,680,882	1,775,201	1,775,201
Censored episodes	1,675,203	1,675,203	1,769,003	1,769,003
Constant	-10.85**	-11.80**	-8.32**	-9.98**
Log likelihood	-44130.09	-40866.59	-47430.62	-44538.54

Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2014: p. 236).
Notes: **p < 0.01. *p < 0.05. +p < 0.10.

Returns from participation in distinct kinds of adult learning in terms of the chances of leaving unemployment

The findings of the longitudinal analyses predicting full-year unemployed persons' chances of exiting unemployment, thereby addressing the fifth research interest, are set out in Table 2.9. First it can be seen that taking part in formal adult learning, tertiary education, or vocational upper secondary education and training significantly enhances the prospects of full-year unemployed men and women to find work. Attending non-formal adult learning or general upper secondary schooling, however, in general does not increase individuals' chances of making the transition from unemployment into employment. Consequently, non-formal adult learning seems to be neither suitable for protecting persons against unemployment, nor is it helpful for improving their employability. This is an indication that non-formal adult learning programs are not able to equip male and female participants with valuable signals for the labor market. Furthermore, taking part in general upper secondary education is evidently only beneficial for individuals if they are employed, but not if they are unemployed, while vocational upper secondary education and training (which is more practically oriented) is useful in either of these situations. In connection with men's and women's original level of education, I again find that for both genders, a higher educational qualification

improves persons' employment stability and betters their chances of leaving unemployment.

Table 2.9: Logistic regression models predicting the chance of leaving unemployment (results as coefficients; N (men) = 46,641; N (women) = 51,268)

	Men		Women	
	Model 1	Model 2	Model 1	Model 2
Adult learning				
Formal adult learning	0.16**	0.12**	0.11**	0.09**
Non-formal adult learning	-0.02	-0.10	0.21**	0.09
Tertiary ed.	0.19**	0.11	0.28**	0.13
Vocational upper sec. ed. and training	0.91**	0.99**	0.92**	0.97**
General upper sec. ed.	-0.16	-0.13	0.19	0.21
Educational level (ref. Compulsory education)				
No ed. qual.		-0.07		-0.29**
Vocational upper sec. ed. and training		0.48**		0.65**
General upper sec. ed.		0.16**		0.31**
Tertiary ed.		0.73**		0.80**
Events	23,991	23,991	24,414	24,414
Total episodes	54,541	54,541	58,308	58,308
Censored episodes	30,550	30,550	33,894	33,894
Constant	0.50**	0.88**	-1.22**	-0.68**
Log likelihood	-43080.18	-39800.29	-44841.35	-42166.57

Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2014: p. 236).
Notes: **p < 0.01. *p < 0.05. +p < 0.10.

Returns from participation in various forms of adult learning in respect of upward and downward career mobility

Finally, in reference to the sixth research objective, Tables 2.10 and 2.11 present the results of the logistic regression models predicting males' and females' chance of upward career mobility as well as their risk of downward career mobility. From the findings it emerges that, when it comes to career progression, attending formal adult learning only pays off for men, who profit from an increased likelihood of salary gains and a decreased risk of income loss. For women, the correlation between formal adult learning and direct career mobility is not significant. Moreover, non-formal adult learning actually proves to be a unfavorable type of training for both genders: It is not only an impediment to upward economic mobility (particularly among men), but also raises the risk of downward income mobility. Interestingly, as regards participating in tertiary education (which was a good predictor for boosting persons' labor market chances in my previous analyses), it turns out that it has both a positive and negative effect on males' and females' earnings mobility.

Table 2.10: Logistic regression models predicting the chance of upward career mobility (results as coefficients; N (men) = 913,203; N (women) = 897,954)

	Men		Women	
	Model 1	Model 2	Model 1	Model 2
Adult learning				
Formal adult learning	0.06**	0.09**	0.00	0.03**
Non-formal adult learning	-0.06**	-0.04**	0.02*	0.04**
Tertiary ed.	0.02**	-0.04**	0.07**	0.06**
Vocational upper sec. ed. and training	0.72**	0.82**	0.73**	0.84**
General upper sec. ed.	-0.27**	-0.23**	0.00	0.09**
Educational level (ref. Compulsory education)				
No ed. qual.		-0.15**		-0.18**
Vocational upper sec. ed. and training		0.19**		0.25**
General upper sec. ed.		0.15**		0.18**
Tertiary ed.		0.61**		0.51**
Events	4,990,209	4,990,209	4,526,855	4,526,855
Total episodes	7,533,289	7,533,289	6,912,175	6,912,175
Censored episodes	2,543,080	2,543,080	2,385,320	2,385,320
Constant	1.97**	2.49**	1.32**	1.79**
Log likelihood	-6729915.4	-6556459.9	-6274307.1	-6170953.3

Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2014: p. 238).
Notes: **p < 0.01. *p < 0.05. +p < 0.10.

While, on the one hand, taking part in some kind of tertiary program provided within the mainstream educational system heightens their chances of improving their income, on the other hand, it also increases their risk of financial losses. This suggests that men and women who engage in tertiary education after labor market entry are more mobile in general. Attending vocational upper secondary education, by contrast, appears to be beneficial in both respects, as well as affecting males and females equally, i.e. it enhances their upward mobility and prevents their downward mobility. Furthermore, the table reveals that participating in general upper secondary education has a negative impact on men's income chances, whereas the results for women are mixed. For women, this type of later-life learning raises both the chances of climbing up the income ladder and the risk of becoming downwardly mobile. With regard to individuals' initial educational level, it is noticeable that a higher level of qualification exerts a positive influence on males' and females' career progress, as it improves the probability of securing higher pay and reduces the risk of income losses. However, an exception here is the finding that persons possessing a general upper secondary degree display a greater risk of downward career mobility than persons with compulsory schooling. This observation may be explained by the circumstance that men and women with a general upper secondary qualification have more to lose than their lesser-qualified contemporaries.

Table 2.11: Logistic regression models predicting the risk of downward career mobility (results as coefficients; N (men) = 913,203; N (women) = 897,954)

	Men		Women	
	Model 1	Model 2	Model 1	Model 2
Adult learning				
Formal adult learning	-0.08**	-0.10**	0.00	-0.01+
Non-formal adult learning	0.05*	-0.01	0.09**	-0.01
Tertiary ed.	0.41**	0.34**	0.43**	0.28**
Vocational upper sec. ed. and training	-0.44**	-0.48**	-0.36**	-0.39**
General upper sec. ed.	0.58**	0.56**	0.26**	0.28**
Educational level (ref. Compulsory education)				
No ed. qual.		0.06**		0.03**
Vocational upper sec. ed. and training		-0.07**		-0.03**
General upper sec. ed.		0.15**		0.28**
Tertiary ed.		-0.31**		-0.08**
Events	1,302,525	1,302,525	1,063,878	1,063,878
Total episodes	7,533,289	7,533,289	6,912,175	6,912,175
Censored episodes	6,230,764	6,230,764	5,848,297	5,848,297
Constant	-2.55**	-2.92**	-2.31**	-2.74**
Log likelihood	-3825389.1	-3749374.2	-3263762	-3224078.8

Source: Own calculations based on population register data maintained by Statistics Denmark. Adapted from Wahler et al. (2014: p. 238).
Notes: **p < 0.01. *p < 0.05. +p < 0.10.

2.3.6 Interim summary and discussion

Especially in today's knowledge-based societies, learning does not end upon leaving initial education and training; it is instead a lifelong process (Blossfeld 2009). In order to keep step with and make progress in modern countries' labor markets – which in recent years have not only become increasingly global and fast-moving, but which are also characterized by an inevitable ageing of the workforce – it is essential for both men and women to engage in adult learning and to profit from its economic (and non-economic) returns (Kilpi-Jakonen et al. 2014). Therefore, the objective of this subsection was to find out if adults' participation in diverse forms of Danish adult learning and the related labor market returns differ by gender. In this context, besides gender, individuals' age as well as their originally achieved educational attainment was also of interest.

Altogether, the results of the empirical analyses have demonstrated that – even in Denmark, a country widely known for its strong gender egalitarianism and the manifold, mostly publicly-funded possibilities offered in the area of later-life learning – it can be worthwhile to look at the issue of adult learning through a gender lens. Within the scope of the descriptive and multivariate investigations, I first concentrated on Danish men's and women's participation in various types of adult learning (including patterns of

participation, participants' age distribution, and chances of participation), then turned my attention towards the gendered labor market returns of different kinds of adult learning (encompassing the risk of becoming unemployed, the chances to exit unemployment, and direct career mobility). At the end of this subsection I would like to briefly sum up the major findings in response to the six research questions which have been examined.

First of all, it appeared that adult learning is indeed a widespread phenomenon in Denmark, which may partly reflect the fact that "[…] countries with higher levels of education also tend to have higher participation rates […]" (Vono de Vilhena et al. 2014: p. 354) in these activities: Only around 24 percent of men and 22 percent of women in my sample did not participate in any kind of later-life learning after labor market entry. Furthermore, with regard to the distinct types of adult learning, I noticed that gender differences are rather marginal, with formal adult learning programs and – at some distance behind – mainstream educational programs (especially vocational upper secondary and training as well as tertiary education) constituting the most frequent forms of activities. Nevertheless, re-entering the ordinary educational system is slightly more popular among females than among males, in particular when it comes to studies at tertiary level. The latter's general popularity may be a result of their function as a 'door-opener' for many higher labor market positions (Kilpi-Jakonen et al. 2014). Non-formal adult learning programs and programs of the general upper secondary track are generally poorly attended, which could be attributed to the fact that the former usually do not result in recognized certificates that can be used as a signal in the labor market, while the latter do not provide direct access to any specific job (Feinstein and Sabates 2012).

For all that adult learning is, on the whole, strongly pursued by Danish men and women, another finding was that both genders' engagement in such activities tends to decline with increasing age, notably in case of persons more than 40 years old. Nevertheless, adult learning opportunities in Denmark cannot be described as very youth-oriented, since the most prevalent form of adult learning (i.e. formal adult learning) mostly attracts middle-aged males and females between 26 and 40 years of age. In this respect it is reasonable to assume that individuals' motivation for investing in human capital wanes as they get older, which is primarily due[197] to the circumstance that there is less time to reap the benefits (Blanden et al. 2010; Kilpi-Jakonen et al. 2014).

[197] Kilpi-Jakonen et al. (2014: p. 7) also mention the "[…] possible incompatibility of learning with adult life-course roles".

During the further course of the analyses – more precisely when predicting the chances of participation in Danish adult learning – it became obvious that there is a gender bias favoring females, who are significantly more likely to take an active part in all forms of lifelong learning than their male contemporaries. One major reason for this could be that women have a greater need to engage in adult learning in order to compensate for (mainly child-related) career interruptions (Kilpi-Jakonen et al. 2014). As aptly summarized by Jenkins (2004: p. 2), females continue "[…] to bear most of the responsibility for the care of children and other dependent family members (OECD, 2002). Women are therefore likely to have gaps in employment, often quite lengthy ones. It is plausible to suppose that they are a group for whom lifelong learning will be particularly important, as they will need to maintain and enhance their skills if they are to return to work". Since Danish women participate in the labor market to almost the same extent as men (owing to the public early childhood education and care system, even when children are still quite young), their desire to resume employment should be especially strong. Besides a gendered attendance of adult learning, I found that, in Denmark, such programs have the potential to partially equalize educational inequalities over the life course. This was shown by the fact that comparatively poorly educated persons (having only completed compulsory schooling) are most likely to participate in learning after labor market entry. However, this also means that there is a group of 'losers' who are not successfully integrated into the Danish adult learning infrastructure, namely individuals with no educational qualification[198].

When then examining whether the diverse forms of Danish adult learning lead to positive labor market outcomes, I showed that both males and females who participated in formal adult learning programs and mainstream educational programs after labor market entry benefited in terms of preventing unemployment. By contrast, non-formal adult learning has generally not proven to be helpful in this regard, which may partly be due to the importance of certificates on Denmark's labor market (Vono de Vilhena et al. 2014). Equally, these kinds of programs may often impart skills that are not directly relevant to the person's working life (Feinstein et al. 2004). In this context, it also turned out that, regardless of gender, a higher level of initial education significantly decreases the risk of job loss. Or, to use Mincer's (1991: p. 22) words: "A major benefit of education in the labor market is the lower risk of unemployment at higher levels of education".

[198] Still, it must be noted that this group is fairly small in Denmark.

Concerning the chances of exiting unemployment with the aid of further learning, the results were again relatively similar for both genders, revealing that formal adult learning and re-entering the mainstream school system in the form of vocational upper secondary education and training or tertiary education seem to be the only promising adult learning options which can support people in finding a new job. Some of the reasons for this have already been cited here. Once again, well-educated men and women (whose highest original educational attainment is at least a vocational upper secondary degree) were in a better position, and hence encountered fewer difficulties returning to employment. According to Pozega et al. (2013: p. 305), "[…] this is typically because higher educational attainment makes an individual more attractive in the labour market". Equally, it is likely that these persons are also "[…] more efficient in acquiring and processing job search information […]" (Mincer 1991: p. 1).

Whereas the effects of participation in adult learning were fairly clear-cut and not particularly gender-specific with respect to individuals' risk of becoming unemployed and their chances of leaving unemployment, the impact on both upward and downward career mobility was rather mixed. In a nutshell: Exclusively participating in vocational upper secondary education and training programs was effective for Danish males and females alike, i.e. it substantially increased their prospects of salary gains and diminished their risk of income losses. On the other hand, however, the attendance of non-formal adult learning had a negative influence on both genders' income mobility. Finally, it emerged that men and women with higher initial qualification levels have a good probability of steering their professional careers in the right direction.

At this point in the present work, a total of three stages in individuals' educational and occupational life course trajectories, unfolding within the Danish 'paradise of gender equality', have been assessed through the gender lens. These were, firstly, children's pathways in tracked Danish post-compulsory education and training; secondly, young adults' initial integration into the Danish labor market; thirdly, adults' labor market returns from participation in diverse forms of Danish adult learning. The subsequent third and final section, providing a concluding summary and discussion, serves to round off the thesis by reiterating its key objectives and assessing the main results. In addition, I will say a few words about the contribution of my research to the field as a whole.

3. Concluding summary and discussion

3.1 Objectives of the present work

What was the background of my study, and what were its main objectives?

The overall aim of my doctoral thesis was to investigate Danish individuals' educational and occupational careers by adopting a gender-based life course perspective. Put briefly, the starting point of this research interest was the assumption that institutional arrangements, and the (gendered) societal opportunity structures created by them, play a role in influencing men's and women's life courses – particularly with respect to such crucial spheres as education and employment (Leisering 2003; Grunow 2006). Building on this, in Section 1, the question was raised whether – even within Denmark's institutional context, known for its strong commitment to giving everyone equal *opportunities* in all areas of society – gender is of relevance for individuals' educational and occupational life course *outcomes*. To address this issue, the analyses carried out in Section 2 of the present work were based on Danish population register data and geared towards answering the following three main questions, whose key results shall once again be briefly summarized and discussed below:

- What is the role of gender regarding childrens' pathways in tracked Danish post-compulsory education and training?
- Are there gender patterns in young adults' educational achievements and first job outcomes at the time of their initial integration into the Danish labor market?
- Does adults' participation in diverse forms of Danish adult learning and the related labor market returns differ by gender?

3.2 Main findings and implications

Children's pathways in tracked Danish post-compulsory education and training and the role of gender

In subsection 2.1, I was able to show that children's gender (and also their social origin, indicated here by their parents' highest educational attainment) is related to the educational trajectories pursued after graduation from compulsory schooling. More

concretely, it appeared that female students, as well as students from more advantaged social origins (at best with academically qualified parents, i.e. a general upper secondary degree or higher), are not only the most likely to complete some kind of upper secondary education soon after successful graduation from basic school education, but also have significantly better chances of initially finishing a program in the general (instead of the vocational) upper secondary track, which enables them to progress to tertiary education. Moreover, I found that these students are more likely to be among the small group of 'upgraders' (denoting the achievement of a general upper secondary qualification after first a vocational upper secondary and training program has been completed), and more often enroll in some sort of tertiary education (given that a general upper secondary degree has been obtained). Although the favorable effect of having well-educated parents persisted for the last research interest within this subsection – namely the initial enrollment in university-level instead of non-university-level tertiary education – male students profit more from this effect than their female contemporaries.

Despite this final reversal of the gender effect to the advantage of male students, my findings still broadly imply that, in Denmark, a feminization of general upper secondary and tertiary education is taking place (see also the results of subsection 2.2); in addition, there is a marked social bias in the recruitment to these programs (Jørgensen and Lindvig 2011; Ballarino et al. 2013). Presumably, this is also[199] due to the binary structure[200] of the Danish mainstream education and training system at upper secondary level, with the general track as the main gateway to tertiary studies: Upper secondary tracking is gendered (and socially selective), as men (alongside students with less-educated parents) more often opt for the vocational track which does not lead to tertiary entrance qualifications, and this in turn leads to a higher proportion of young women (as well as children from more advantaged social origins) in general upper secondary and tertiary education (Ballarino et al. 2013; Ress and Azzolini 2014). As Ress and Azzolini (2014: p. 57) appositely note, the transition from comprehensive primary and lower secondary education to tracked upper secondary education "[…] is not trivial. Although school tracks cannot be ordered hierarchically, obtaining a general school degree versus a technical or a vocational one greatly increases individuals' chances to continue studies at

[199] As already stated in point 2.1.7, the feminization of programs at tertiary level may also be caused by a 'performance effect' and/or an 'occupational effect' (Ballarino et al. 2013).

[200] Hence, although "[…] Denmark has a long political tradition of pursuing equal access to education, regardless of gender and social background […]", Danish upper secondary education "[…] does not fit well with the common notion of a Nordic model of education that is characterized as being school based and non-selective and linked to the egalitarian, social-democratic type of universal welfare regime" (Jørgensen 2014: p. 6, 30).

the tertiary level and to gain access to more rewarding and more stable occupational positions in the future (Barone, 2012)".

Another well-known and much-debated problem in this context is the decreasing number of participants, and especially the high dropout rate[201], in Danish vocational upper secondary education and training (also referred to as 'VET'), notably among young men, constituting the majority of the students in such programs: The overall rate of non-completion in the vocational upper secondary track has roughly doubled, from less than 20 percent in the late 1990s to more than 40 percent in 2011 (Jørgensen 2011; Jørgensen 2014; Jørgensen 2015). Apart from the fact[202] that many of the dropouts have an insufficient level of basic skills, there is also a lack of training places needed for the practically-oriented main course[203] of the vocational programs (European Commission 2015b). This gives a clear indication that within the Danish dual system of VET "[…] the greatest risks are located inside the programme, in the transition from the school based basic course to the work based main course […]", resulting in a division[204] between students who get access to a training placement and "[…] complete their course and students who drop out" (Jørgensen 2014: p. 16, 29). Of particular concern is the – fortunately relatively small – group of young individuals leaving the mainstream educational system without a formal upper secondary qualification[205], putting them "[…] at risk of becoming 'future candidates' for one of the several programmes for adults with basic skills needs" (Bowers et al. 1999; Colardyn and Baltzer 2008: p. 11).

[201] This issue did not fall under the scope of my investigations; however, the rise in dropout rates from vocational upper secondary education is a well-established and intensively discussed theme in Denmark.

[202] Besides, it is not unusual for students to change to another vocational upper secondary and training program (European Commission 2015b).

[203] Nevertheless, a not inconsiderable number of students also drop out during the work-based main course of the programs in vocational upper secondary education and training (Jørgensen 2014).

[204] It can therefore be said that "[…] selection occurs not only during the transition from the compulsory basic school to the two tracks of upper secondary education […]", but increasingly also "[…] happens within the VET programmes […]" (Jørgensen 2014: p. 29).

[205] Especially nowadays, where finishing at least some kind of upper secondary education has become almost a prerequisite for finding a good job, male and female students who drop out and never complete an education at post-compulsory level face a signficantly higher risk of being penalized in the labor market and having a reduced quality of life (Bowers et al. 1999; Jørgensen 2014). Consequently, in order "[…] to ensure a successful transition to work and adult life […]" diminishing the percentage of early school leavers, as well as the dropout rate from (vocational) upper secondary programs, must be a key priority on Denmark's policy agenda (Bowers et al. 1999: p. 26).

From the foregoing it can be concluded that the stratified system of education and training found in Danish post-compulsory schooling, and here specifically the system at upper secondary level, has both positive and negative aspects. On the one hand, the two-track upper secondary system acts as a 'safety net' for students who are less academically oriented, and provides (for the most part fast and effective) access to the skilled labor market. On the other hand, and as demonstrated by my analyses, it diverts students – notably young males and those from lower social origins – from tertiary education (Jørgensen 2014). With regard to the issue of gender, Jørgensen (2015: p. 1) observes that, over the last two decades, there has been a generally growing political interest "[…] in the high dropout rates and low performance in education of boys compared to girls – at times in the form of a 'moral panic' (Smith 2010)". This has also been the case in Denmark where 'the boy problem' in education now is placed high on the agenda of education policy". Furthermore, because taking up a VET program is increasingly seen as "[…] cutting yourself off from opportunities later in the life course […]", an additional focus lies on measures aimed at improving the vertical permeability[206] to tertiary education (Jørgensen 2014: p. 18). For this reason, since 2010 students have been given the opportunity to acquire so-called 'hybrid qualifications', also referred to as 'EUX programs'[207] (Jørgensen and Lindvig 2011). These programs, with a length of four years and one month, are positioned between the vocational and the general upper secondary educational pathway, combining elements of both tracks. Accordingly, students with a hybrid upper secondary degree gain entrance to an occupation in the skilled labor market as well as to tertiary education institutions (Jørgensen and Lindvig 2011; Rolls 2012).

Young adults' initial integration into the Danish labor market and gender patterns in entrants' educational achievements and first job outcomes

My second empirical study, carried out within subsection 2.2 of the present thesis, revealed firstly that, across birth cohorts, both genders are bringing ever higher educational levels to their first significant job. At the same time, and commensurate with the findings made in subsection 2.1, it became apparent that – corresponding with the educational expansion which began in the 1960s – female labor market entrants' educational attainment has risen more than that of their male contemporaries, which in

[206] Expanding access to tertiary education is not just important for fostering equity in education, but also in view of the growing role of later-life learning opportunities within the globalized knowledge economy (Jørgensen and Lindvig 2011).

[207] At present, however, EUX programs are still in their infancy and are only provided in a limited number of occupational fields (others are in preparation) (Jørgensen and Lindvig 2011; Rolls 2012). Also, the new hybrid programs do not give admission to all types of tertiary education (Jørgensen and Lindvig 2011).

concrete terms means that women in younger cohorts have not only caught up with but even surpassed men with respect to the level of qualification held at the time of their initial integration into employment. Besides the clear disparities between male and female educational achievements, I also noticed both gender-based horizontal (illustrated using Singelmann's classification of occupations) and vertical (measured on the basis of gross annual earnings) segregation patterns in young Danish adults' first job outcomes. Consequently, even at the outset of their professional careers, men and women are taking up work in quite different occupational sectors: Whereas the former are dominant in the extractive and the transformative sector, the latter are more frequently employed in the fields of social and personal services. Moreover, females are, on average, earning considerably less at first entry into work than males; here gendered educational and horizontal asymmetries are also playing a part. Notwithstanding the aforesaid, it emerged that over the observation period (i.e., between 1980 and 2009) both component dimensions of employment-related gender segregation have lost in importance. This evidence suggests that women in Denmark have, at least partly, been able to convert their educational success into gains on the labor market.

One might legitimately ask why, given the evolving female advantage in educational achievement I detected, gender segregation in the Danish labor market has not by now disappeared completely (or, in case of vertical inequalities, even reversed itself). As reported by Blossfeld et al. (2015), there are two major theoretical arguments according to which such a gender convergence at labor market entry could be expected. These are, firstly, the neoclassical theories of human capital (Mincer 1958; Becker 1970), proceeding from the assumption that workers' skills and knowledge – mainly acquired through education and training – represent a core indicator of occupational productivity as well as occupational rewards, and therefore also the main cause of labor market segregation. Considering the fact that "[…] today's young women are, on average, higher educated than their male peers, a strict human capital approach would expect gender inequalities at labor market entry not just to diminish; they should also reverse across time as women compared to men yield higher job rewards due to higher productivity" (Blossfeld et al. 2015: p. 8). A second line of argumentation, based on sociological theories of modernization (Parsons 1970), liberal industrialism (Treiman 1970), and post-industrialism (Bell 1976), claims that – in modern societies, which are oriented towards an efficient allocation of talents to occupational positions – ascriptive characteristics (like gender) are continually losing their significance, whereas the role of educational achievement is gaining in importance. As with the aforementioned human capital theory,

sociological theories on modernization would hence assume a narrowing of the gender gap in labor market success over the course of time (Blossfeld et al. 2015).

However, the crux of these logics is that they are conceptualizing "[…] education as a homogeneous good or stock of capital […]" (Blossfeld et al. 2015: p. 8). In reality, however, this is not the case, since educational systems are usually organized both vertically and horizontally. Within Danish post-compulsory schooling, for example, a distinction is made between the vocational and the general track of upper secondary education, as well as between university-level and non-university-level tertiary education; additionally, these main educational pathways are internally differentiated by the selected specialization (Steinmetz 2012; Blossfeld et al. 2015). It can therefore be concluded that "[…] even though men and women may hold equal levels of education, their type of education and field of study may differ[208], and these dissimilarities could lead to heterogeneous occupations with different rewards […]", which ultimately (amongst other factors) contributes to a certain persistence of gender-based horizontal and vertical employment segregation in Denmark[209] (Blossfeld et al. 2015: p. 9).

Adults' labor market returns from participation in diverse forms of Danish adult learning and differences by gender

Finally, in subsection 2.3, I have proven that both the men and women in my sample are to a considerable – and quite similar – extent pursuing some kind of Danish adult learning (in the present case encompassing both the formal and non-formal adult learning programs offered within the adult education and continuing training system, as well as mainstream educational programs[210] provided by the ordinary education and training system) after labor market entry. A closer look at patterns of participation and attendants' age distribution in the diverse types of adult learning under study revealed rather small differences by gender. Taking up a formal adult learning program and – albeit to a lesser

[208] Thus, for instance, around half of all the programs offered in Danish vocational upper secondary education and training are clearly (i.e., a share of more 90 percent) dominated by either males or females (Jørgensen 2014). In the words of Jørgensen (2015: p. 1, 2), it can hence be said that most of these "[…] programmes offer students a combination of a vocational identity and a gender identity as they have a strong occupational profile and at the same time are strongly gendered".

[209] Indeed, Steinmetz (2012) shows that, at the national level, there is a relatively strong correlation between educational and occupational segregation by gender, with Denmark (together with the other Nordic countries) ranking high on both counts. Nevertheless, "[…] low educational segregation is not automatically accompanied by low occupational segregation […]", as demonstrated for example by Estonia, France, or Portugal (Steinmetz 2012: p. 49). This suggests that other factors are also playing a role in this regard (see my remarks in point 2.2.2).

[210] That is, programs of vocational upper secondary education and training, general upper secondary education, and tertiary education.

extent – re-entering mainstream schooling in the form of tertiary studies generally constitute the two most frequently chosen options. Furthermore, it is males and females in the age group 26 to 40 years who show the highest participation rate in some sort of adult learning and, more specifically, in formal adult learning programs (regarding all other kinds of later-life learning, among both genders those aged 25 years or younger are particularly strongly represented). Still, in the course of further analyses I found a significant gender imbalance concerning the chances of participation in later-life learning: Women are markedly more likely to engage in such activities than men. Another insight has been that comparatively poorly educated persons – i.e., without having initially completed some kind of post-compulsory education – tend to make greater use of adult learning opportunities when compared both to those with a higher and with the very lowest original educational level. Regarding the returns of participation[211] in different forms of Danish adult learning (captured by measuring the risk of becoming unemployed, the chances of leaving unemployment, as well as upward and downward income mobility), it became obvious that adult learning can indeed influence individuals' labor market success; most of the effects are broadly similar for both genders. Briefly summarized, the clearest and most advantageous outcomes emerged for formal adult learning programs and vocational upper secondary studies. In contrast, non-formal adult learning has a relatively negligible relationship with the investigated outcomes. Besides, for all the labor market returns examined, males and females with higher initial educational levels profit from the best conditions; it is thus clear that investing in education from the outset is an important means of enhancing employment prospects.

On the whole one can say that in this context, besides the gendered chances of participation in Danish adult learning and a few variations in terms of the related benefits on the labor market, there are more similarities than differences between men and women. Of greater concern here, in my opinion, is the finding that those who lack basic educational qualifications – and thus actually have the greatest need to improve their skill levels through lifelong learning – are the least likely to undertake such activities in adult life. Hence, while my results underline the value of adult learning in promoting better labor market outcomes for both males and females, they also bring to light the fact that "[…] those who need it most are the ones who are systematically marginalised from enjoying the benefits of adult education" (UNESCO Institute for Lifelong Learning 2009: p. 14). Despite a well-established infrastructure for adult learning and hardly any substantial barriers to participation, the vulnerable group of disadvantaged individuals

[211] When compared to non-participation in adult learning.

remains "[…] convinced that adult education has little power to change their lives […]", and therefore either does not engage in later-life learning at all or does so far less than other groups on the labor market (The Ministry of Education 2008; UNESCO Institute for Lifelong Learning 2009: p. 121; GHK and Research voor Beleid 2011). Consequently, reaching all adults, irrespective of prior education (but also gender, age, etc.), represents the major challenge for Danish adult learning today (Sprogøe 2003; UNESCO Institute for Lifelong Learning 2009).

Other points of criticism include, for instance, the fact that the total[212] field of adult education supply is not systematically monitored and statistically recorded at a national level, and as a consequence, information is not efficiently collated (Brems 2003). This in turn means that the system runs the risk of creating overlap problems; it is also difficult to maintain an overview of the broad range of learning opportunities – both for the participants and "[…] the counselling services, which aim to guide people through what is sometimes described as 'the education jungle'" (Brems 2003: p. 29). Moreover, certain sections of adult learning are struggling with absence and dropout problems, impeding the effectiveness of educational efforts in later life (Brems 2003). According to Brems (2003: p. 46), this may be partly due to the fact that attendants are not sufficiently included in the planning and implementation of adult learning activities; indeed, recent reforms are even more likely to "[…] stress the supremacy of the curriculum at the expense of participants' involvement".

Résumé: The relevance of gender for individuals' educational and occupational life course outcomes within the Danish institutional context

In view of the findings summarized above, it is evident that – even within the framework of Denmark's highly gender-egalitarian institutional setting, committed to providing equal *opportunities* to all – men's and women's educational and occupational life course *outcomes* are not congruent. Or, in other words – even in this case, gender is an important determinant as regards the diversity in individuals' biographies: As Danish men and women move through their life course, different – and notably gendered – patterns begin to emerge (Jones 2010). Thus, although "[…] Denmark has been called one of the most gender equal societies in the world […] there is still room for improvement" (Staur 2010: p. 2).

[212] Meaning both public and private adult learning opportunities.

It should, however, be kept in mind that 'different' does not always mean 'unequal' or 'disadvantaged', and that one can distinguish "[…] between inequalities that arise from circumstances beyond the control of individuals and those that stem from differences in preferences and choices[213]. A substantial body of research documents such male-female differences in risk aversion, social preferences, and attitudes about competition. It follows that if men and women differ, on average, in attitudes, preferences, and choices, then not all observed differences in outcomes can be attributed to differences in opportunities[214]" (The World Bank 2011: p. 4). In the end there is no simple explanation for the genesis of gender differences and disadvantages across the life course; instead, it has to be assumed that these are caused by a variety of interwoven factors which are not easy to disentangle (Collins et al. 2000).

In addition, I consider it important to note that, although gender equality should mean that "[…] all human beings, both men[215] and women, are free to develop their personal abilities and make choices without the limitations set by stereotypes, rigid gender roles and prejudices […]" (EURYDICE 2010: p. 22), it "[…] does not mean that men and women will become the same" (United Nations 2011: p. 1). As aptly noted by the Danish Minister for Gender Equality, Lykke Friis (2011: p. 3) "[…] modern gender equality is about giving the individual even greater opportunity, while at the same time allowing room for diversity. Everyone should have the chance to follow their dreams, and no one should be given a label solely based on their gender. […] This cannot be done by making legislation. Formally, we already have gender equality and the legal framework to protect it. […] However, we can still do more to change the old mindsets that stand in the way of the individuals' free choice and the progression of our society".

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[213] Hence, although "[…] individuals in modern societies have the benefit of exercising their agency and are able to select paths to follow, their choices […]" may still be coupled with gender-related internalized values, social norms and expectations (Chłoń-Domińczak and Lis 2013: p. 2; The World Bank 2011).

[214] Framing gender equality as equality of results instead of equality of opportunity is probably "[…] more ambitious, as the focus shifts from procedures to outcomes, asking not where people start out, but where they end up" (Plantenga et al. 2009: p. 21). At the same time, however, an 'equality of outcomes' approach is not without difficulty when it assumes that men and women must become the same (with one gender as the 'norm') (Plantenga et al. 2009).

[215] Gender equality should no longer be seen as a matter of importance only for women (Friis 2011). For instance, young men are currently losing ground in school at an alarming rate: A "[…] report from OECD shows that Denmark is one of the Western countries where the difference between boys and girls completing a secondary education is greatest" (Friis 2011: p. 9). Or, to give another example, even now, no more than 8.6 percent of the total family leave is taken by Danish men – although it is known that many fathers actually wish to take longer periods of parental leave (Friis 2011). In this context, it is also important to support the development of a "[…] workplace culture where it is acceptable for men […]" to put this into practice (Friis 2011: p. 10).

3.3 The contribution of my research

As I set out at the beginning of my work, the achievement of equality between males and females has been an internationally recognized goal for some time (Blossfeld et al. 2015). Key reasons include not only the fact that gender equality is now regarded as a fundamental principle of human rights, but also the notion that it is a deciding factor for societies' economic prosperity and social development (United Nations Population Fund 2000; United Nations 2011; Ministry of Gender Equality of Denmark 2014). Accordingly, "[…] gender equality is a winning strategy, both for society, and for the individual" (Friis 2011: p. 3). Denmark is often viewed as a prime example of a nation where gender equality is *formally* realized today, which is likely to be the main reason why an empirical assessment of the *actual* situation (i.e., 'equality of outcome' rather than just 'equality of opportunity') tends to be neglected in the literature. To my knowledge, this is the first study to investigate Danish men's and women's experiences in relation to such crucial themes as educational and occupational outcomes over a long stretch of time, here by adopting a gender-based life course perspective. I thus consider my thesis as having made a genuine sociological contribution to a better understanding of the emergence of gender disparities and their development over time – specifically within Denmark's 'paradise of gender equality'. The results of my analyses confirmed that many things are indeed going well, but they also highlighted areas where there is still scope for doing better. In doing so, I provided a rich picture of gendered educational and occupational patterns at the national level, indicating that gender equality must also remain part of the country's policy agenda in the future. Of particular significance here is probably the combating of deep-rooted, harmful stereotypes about gender, which are pigeonholing both males and females into restrictive roles (Worell 2001). I would like to close with a quote which Hannan (2006: p. 1, 2) published in reference to how a world truly based on gender equality could look:

"This new world would be a world in which men and women work together as equal partners to secure better lives for themselves and their families. In this world, women and men share equally in the enjoyment of their capabilities, economic assets, voice, and freedom from fear and violence. They share the care of children, the elderly and the sick; the responsibility for paid employment; and the joys of leisure. In such a world, the resources now used for war and destruction are instead invested in human development and well-being; institutions and decision-making processes are open and democratic; and all human beings treat each other with respect and dignity."

Appendices

Appendix A: Logistic regression models predicting non-completion of any kind of upper secondary education, only men (results as coefficients; N = 39,716)

	Model 1	Model 2
Parental education (ref. Vocational upper secondary education and training)		
Compulsory education or less	0.68**	0.61**
General upper secondary education	-0.09	0.07
Short-/Medium-cycle tertiary education	-0.25**	-0.06
Long-cycle tertiary education	-0.50**	-0.12
GPA in class 9 (ref. Fair performance)		
Good performance or better		-0.84**
Minimum acceptable performance		0.68**
Constant	-2.43**	-2.81**
Log likelihood	-10450.96	-10237.96

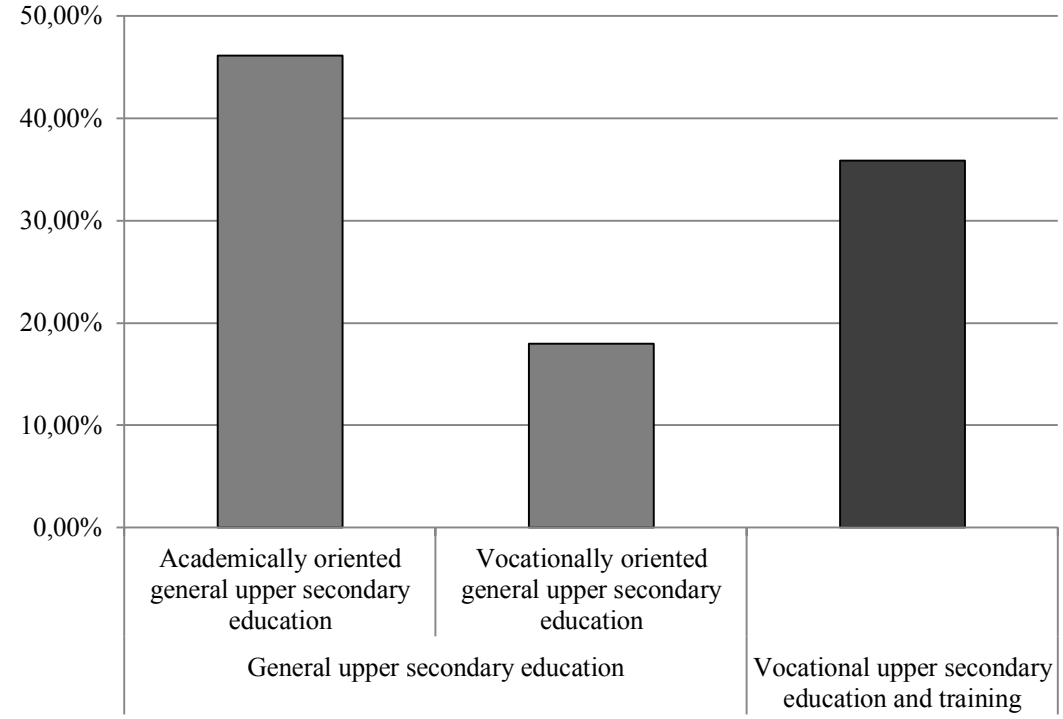
Source: Own calculations based on population register data maintained by Statistics Denmark.
Note: **p < 0.01. *p < 0.05. +p < 0.10

Appendix B: Logistic regression models predicting non-completion of any kind of upper secondary education, only women (results as coefficients; N = 40,883)

	Model 1	Model 2
Parental education (ref. Vocational upper secondary education and training)		
Compulsory education or less	0.61**	0.45**
General upper secondary education	-0.14	0.12
Short-/Medium-cycle tertiary education	-0.23**	0.04
Long-cycle tertiary education	-0.67**	-0.16
GPA in class 9 (ref. Fair performance)		
Good performance or better		-0.73**
Minimum acceptable performance		1.00**
Constant	-2.50**	-2.93**
Log likelihood	-10234.00	-9850.09

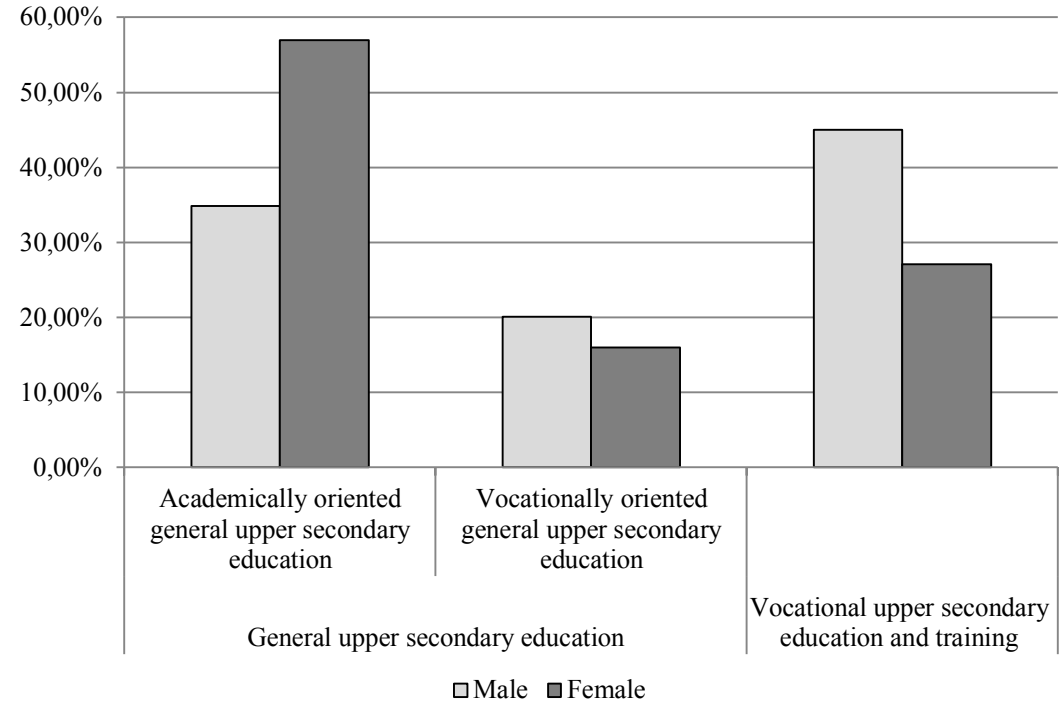
Source: Own calculations based on population register data maintained by Statistics Denmark.
Note: **p < 0.01. *p < 0.05. +p < 0.10

Appendix C: Type of initially completed upper secondary education (results as percentages; N = 74,774)



Source: Own calculations based on population register data maintained by Statistics Denmark.

Appendix D: Type of initially completed upper secondary education by gender (results as percentages; N = 74,774)



Source: Own calculations based on population register data maintained by Statistics Denmark.

Appendix E: Logistic regression models predicting initial completion of an academically instead of a vocationally-oriented general upper secondary education (results as coefficients; N = 47,939)

	Model 1	Model 2	Model 3
Gender (ref. Male)			
Female	0.72**	0.91**	0.88**
Parental education (ref. Vocational upper secondary education and training)			
Compulsory education or less		0.19**	0.23**
General upper secondary education		0.42**	0.34**
Short-/Medium-cycle tertiary education		0.94**	0.87**
Long-cycle tertiary education		1.93**	1.78**
GPA in class 9 (ref. Fair performance)			
Good performance or better			0.83**
Minimum acceptable performance			-0.43**
Constant	0.55**	-0.21**	-0.22**
Log likelihood	-27844.67	-26019.16	-25528.52

Source: Own calculations based on population register data maintained by Statistics Denmark.
Note: **p < 0.01. *p < 0.05. +p < 0.10

Appendix F: Sample overview by graduation year and gender

	Graduation year		
	2002	2003	Total
Men	19,337	20,379	39,716
Women	20,077	20,806	40,883
All	39,414	41,185	80,599

Source: Own calculations based on population register data maintained by Statistics Denmark.

Appendix G: Sample overview by birth cohort and gender

	Birth cohort				
	1960-64	1965-69	1970-74	1975-80	Total
Men	152,713	171,039	170,544	182,477	676,773
Women	161,892	174,869	157,065	167,233	661,059
All	314,605	345,908	327,609	349,710	1,337,832

Source: Own calculations based on population register data maintained by Statistics Denmark.

Appendix H: Sample overview by birth cohort and gender

	Birth cohort		
	1955-64	1965-80	Total
Men	301,022	676,590	977,612
Women	319,283	652,886	972,169
All	620,305	1,329,476	1,949,781

Source: Own calculations based on population register data maintained by Statistics Denmark.

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